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PROVINCE OF BRITISH COLUMBIA

FORTY-EIGHTH REPORT

OF THE

PROVINCIAL BOARD OF
HEALTH

FOR THE

YEAR ENDED DECEMBER 31ST

1944



PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C. :

Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
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OFFICE OF THE PROVINCIAL SECRETARY,
VICTORIA, B.C., January 19th, 1945.

To His Honour W. C. WOODWARD,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Report of the Provincial Board of Health for the year ended December 31st, 1944.

G. S. PEARSON,
Provincial Secretary.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., January 19th, 1945.

The Honourable Geo. S. Pearson,
Provincial Secretary, Victoria, B.C.

SIR,—I have the honour to submit the Forty-eighth Report of the Provincial Board of Health for the year ended December 31st, 1944.

I have the honour to be,

Sir,

Your obedient servant,

G. F. AMYOT, M.D., D.P.H.,
Provincial Health Officer.

THE PROVINCIAL BOARD OF HEALTH.

The Provincial Board of Health of British Columbia is the Lieutenant-Governor in Council, under the provisions of the "Health Act." For the year 1944 the members of the Provincial Board of Health were:—

- The Hon. JOHN HART - - - *Premier, Minister of Finance, and President of the Executive Council.*
- The Hon. G. S. PEARSON - - - *Provincial Secretary, Minister of Labour, and Commissioner of Fisheries.*
- The Hon. R. L. MAITLAND - - *Attorney-General.*
- The Hon. E. T. KENNEY - - - *Minister of Lands.*
- The Hon. K. C. MACDONALD - - *Minister of Agriculture.*
- The Hon. E. C. CARSON - - - *Minister of Mines and Minister of Trade and Industry.*
- The Hon. H. ANSCOMB - - - *Minister of Public Works, Minister of Railways, and Minister of Municipal Affairs.*
- The Hon. H. G. T. PERRY - - - *Minister of Education.*

The Hon. G. S. Pearson, Provincial Secretary, acts as Minister of Health.

SENIOR PUBLIC HEALTH TECHNICAL STAFF.

- G. F. AMYOT, M.D., D.P.H. - - - *Provincial Health Officer.*
- J. S. CULL, B.A., M.D., D.P.H. - - - *Assistant Provincial Health Officer.*
- R. BOWERING, B.Sc. (C.E.), M.A.Sc. - *Public Health Engineer.*
- J. J. CARNEY, M.R.S.I., B.V.Sc. - - - *Consultant in Milk and Food Control.*
- C. R. STONEHOUSE, C.S.I. (C.) - - - *Senior Sanitarian.*
- Miss D. E. TATE, R.N., B.A.Sc., M.A. - - *Director, Public Health Nursing.*
- Miss M. FRITH, R.N., B.A., B.A.Sc., M.P.H. *Consultant, Public Health Nursing.*
- Miss MARY BALDWIN, B.Sc. (H.Ec.) - - *Consultant in Nutrition.*
- Miss EDITH STEWART, B.A., B.A. in Lib. *Public Health Educator.*
- C. E. DOLMAN, M.B., B.S., D.P.H., Ph.D. - *Director, Division of Laboratories.*
- W. H. HATFIELD, M.D. - - - - *Director, Division of Tuberculosis Control.*
- J. D. B. SCOTT, B.A., B.Com. - - - - *Director, Division of Vital Statistics.*
- D. H. WILLIAMS, B.Sc., M.D., M.Sc. - *Director, Division of Venereal Disease Control (on Active Service).*
- W. C. MOONEY, M.D., D.P.H.
(Major, R.C.A.M.C.) - - - - *Acting-Director, Division of Venereal Disease Control.*



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REPORT *of the* PROVINCIAL BOARD OF HEALTH

YEAR ENDED DECEMBER 31st, 1944.

G. F. AMYOT, M.D., D.P.H., PROVINCIAL HEALTH OFFICER.

INTRODUCTION.

At the termination of the year 1944, after five years of war, it is gratifying to be able to report considerable progress in maintaining and extending the Provincial Health Services to meet the rapidly expanding health demands of the Province of British Columbia. The shortage of technically trained personnel has been one of the most difficult problems to overcome. However, by the wholehearted co-operation of the senior and key technical and professional members of the Provincial Health staff and the loyalty and progressiveness of all members, many of the programmes have received considerable study resulting in more effective administration and, through this means, an expansion and greater use of the services provided.

A few of the highlights of the year's activity of the Provincial Health Services seem worthy of note in this introductory part of the 1944 Report.

Stimulation and development of local health services and their maintenance at a high level of efficiency is one of the first responsibilities of any Provincial Health Department. An extended programme of local health supervision by the Consultants of the Provincial Board of Health has been provided to help the local health officials meet many of their difficult health problems. In addition, every Division of the Provincial Board of Health has given more consideration to the needs of local health services and modified or extended their programmes to meet these needs.

A new Health Unit was established in the fall of 1944 in the North Okanagan Valley, with headquarters in Vernon. This was in answer to the continued demands of the local people, particularly the Council at Vernon, following a disastrous milk-borne typhoid epidemic which occurred in the latter part of 1943, resulting in fifty-three cases and four deaths. It is anticipated that this Health Unit will be extended to include the entire North Okanagan Valley.

A number of new public health nursing services were established. Further nursing services would have been developed if trained Public Health Nurses were available. The same is true of Health Units.

In co-operation with the executive of the College of Physicians and Surgeons and the District Advisory Committee of the Canadian Medical Procurement and Assignment Board, of which latter committee the Provincial Health Officer is a member, physicians were procured to serve various parts of the Province where no medical service was available. These practising physicians were then appointed part-time Medical Health Officers for the area.

In Telegraph Creek and Atlin, where there has been no medical service available for some time, nurses appointed through the Deputy Provincial Sec-

retary are functioning to provide a service in lieu of medical service and working in close co-operation with the Provincial Board of Health.

The nutrition programme of the Provincial Board of Health and the Provincial Nutrition Committee has been extended to many parts of the Province and is being developed in co-operation with local committees, schools, the Education Department, the Red Cross Nutritionist, and the Nutritionist appointed by the Greater Vancouver Metropolitan Health Board. In addition, arrangements have been completed by the Division of Nutrition of the Federal Government to provide a Consultant Nutritionist to work in British Columbia and Alberta in co-operation with the Provincial Consultant in Nutrition. A school-lunch programme has been developed jointly with the Provincial Department of Education, School Inspectors, local School Boards, principals, and teachers. Surveys have been made of various Provincial and other institutions to aid them in providing a balanced diet.

Considerable progress has taken place in the Division of Public Health Engineering to augment the broad programme of environmental sanitation. A Consultant in Food and Milk Control, experienced in public health and having a degree in veterinary medicine, was appointed to aid local health services in their problems of food and milk control. A Senior Sanitarian, needed for a long time, has also been appointed to the staff of this Division to work in close collaboration with local health services, their Sanitarians, the Provincial Police, and particularly to investigate the sanitary conditions in mining, lumbering, and other camps employing large numbers of men. Further study of the sanitary conditions in the living-quarters in canneries has been completed and reports sent to the various companies concerned, with recommendations for improvements.

A number of regulations dealing with sanitary matters are under review and revision to bring these up to date and provide a guide to general improvement in sanitation.

Much work has been done in the field of Public Health Engineering and environmental sanitation in co-operation with the armed forces.

The survey of rodents is at present confined to Coast cities and towns and is a co-operative endeavour between the Federal Department of Health and Welfare and the Provincial Board of Health. Reports have been sent to various communities surveyed with recommendations for improving the rat situation in these communities.

The Division of Tuberculosis Control has continued its extensive programme and made considerable advances during the year. Two mobile Chest Survey Units are operating throughout the Province, providing a free chest X-ray to industry, schools, and other groups of people. This is in addition to the four Travelling Units that cover the Province. All clinics, both stationary and travelling, are now using more rapid methods to provide chest examinations for more people.

Reorganization of the course in the control of tuberculosis for undergraduate nurses from various hospital training schools also took place. This new method should provide a much more adequate course to supplement that given in the nurse-training schools.

The urgent demand for tuberculosis beds has been met by the commencement of a temporary structure to house seventy beds and a plan for the erection of a permanent tuberculosis hospital to provide eventually 500 more beds, with 300 beds in the first wing.

Closer co-operation with local health services has been developed by the Division of Tuberculosis Control, with the result that more effective case-finding methods have been devised and better service provided for patients, prior to and after sanatorium care.

The Provincial Laboratories have continued to meet an increasing demand for public health laboratory services in the same overcrowded and unsatisfactory quarters located in four houses in Vancouver. Blood plasma processing in co-operation with the Red Cross continued and expanded with a great deal of credit being due to the staff of the Provincial Laboratories who contribute considerably of their time on a volunteer basis to aid in this important war-work.

It is planned to provide new and adequate quarters for the main Public Health Laboratory in the near future. This will be in a building in which are brought together all the Provincial health services.

The Division of Vital Statistics is receiving increased demands on its services as the need for statistics receives greater emphasis and birth and other certificates are required by more agencies.

A Dominion-Provincial conference was held in Ottawa in conjunction with the Dominion Health Council meeting in the fall to discuss the many related statistical problems of the Federal and Provincial Governments. Plans were evolved at this conference in connection with checking the birth certificates for Family Allowances. Mr. J. D. B. Scott, Director of Vital Statistics, attended this conference as the British Columbia representative.

The Division of Vital Statistics has expanded its services to all the Provincial Health and Welfare Services as well as to local health services, in aiding them to make better use of statistics and statistical facilities.

The Division of Venereal Disease Control has suffered again extensively through loss of trained personnel. However, in spite of this difficulty, extension in the programme has taken place with a resultant increase in case-finding and therefore the placing of more persons under treatment who are suffering from venereal disease. A study of the complete organization of the Division was carried out through the Provincial Health Officer, the Assistant Provincial Health Officer, the Director of Vital Statistics, and the Director of Public Health Nursing, in co-operation with the staff of the Division of Venereal Disease Control. As a result of this survey, a complete plan of reorganization to simplify administration and more effectively utilize the services of the technical, professional, and other personnel available was evolved.

Through money made available by the then Department of Pensions and National Health, Public Health Nurses specially trained in the epidemiology of venereal disease control were added to the staff of the Division to work in close co-operation and collaboration with all local health services and private physicians in improving case-finding and case-holding methods. The result of this has been an increased interest on the part of the local physicians and health workers with resulting improvement in the venereal disease control programme.

Two important venereal disease conferences were held during the year: One a Dominion-Provincial conference in Ottawa and the other a Western venereal disease conference in Regina, where the four Western Provinces had an opportunity to discuss their related problems. The Acting-Director of the Division of Venereal Disease Control attended both these conferences, and also the International conference held in St. Louis, Mo., where a great deal of valuable information in the advanced control and treatment of venereal disease was obtained. The Provincial Health Officer also attended and spoke at the meeting in Regina.

Due to the serious shortage of trained venereal disease physicians the Department of National Defence, acting on a request from the Provincial Secretary, made available the services of Major W. C. Mooney, as Acting-Director of the Division, on a seconded basis. Previous to this time, Dr. Dorothy Saxton had carried a tremendous load as a treatment physician and also as Acting-Director of the Division. Due to health reasons, it was necessary for Dr. Saxton to tender her resignation shortly after Major Mooney was appointed Acting-Director of the Division.

In the field of Public Health Education, considerable progress has been made by all the Divisions of the Provincial Board of Health. Numerous talks by various members of the Central and Divisional staffs have been given to various organizations and groups, as well as a number of radio presentations. The usual courses for undergraduate nurses in the various specialities of public health have been continued and in Victoria a course of lectures was again given to the Normal School students.

The Provincial Police School for experienced police officers asked for a special series of lectures on public health which lectures were given by the senior officials of the Provincial Health Services.

A start on the development of a Division of Public Health Education for the Provincial Board of Health was made when a candidate was chosen to utilize a fellowship made available by the W. K. Kellogg Foundation, and now Miss McNevin is taking a course at the University of North Carolina leading to a degree in Public Health Education. A place in this course, one of the few of its kind on the North American Continent, was kindly made available to British Columbia through the courtesy of the Professor in charge, with the consent of the United States Public Health Service. It is hoped that more candidates for Public Health Education can be secured in the coming year and sent for their specialized training. When these return they will be detailed to local Health Units for duty. In this way it is hoped to broaden and unify the programme of Public Health Education throughout the Province.

A number of general highlights which are worthy of mention include changes in the "Health Act" transferring statutory grants paid to local communities on behalf of Public Health Nurses, dentists and dental assistants, from the Education Department to the Provincial Board of Health. This enabled the one Provincial service to provide all monetary grants-in-aid to the local Public Health Services and also the necessary technical supervision that is so essential if these services are to be maintained on a high scientific basis. Two additional changes were made in the "Health Act," one clarifying the

term "Health Officer," and the other making provision for hospitalization of difficult chronic invalids who refuse this service.

An amendment to the "Municipal Act" permitting municipalities to hold a plebiscite in connection with the pasteurization of milk has an important bearing on public health. The "Milk Act" was also changed to permit the "short-holding period" method of pasteurization as well as the formerly accepted method. This is a decided advance.

A Dominion-Provincial conference on Health Insurance was held in Ottawa, at which was discussed a proposed draft of a Health Insurance Bill. The Hon. George S. Pearson, Provincial Secretary; Mr. J. V. Fisher, Assistant Deputy Minister of Finance; Mr. J. D. B. Scott, Director of Vital Statistics; and the Provincial Health Officer attended this conference. The entire field of Health Insurance was covered in the deliberations but no definite action arose following the meeting. This meeting was held in lieu of the spring meeting of the Dominion Health Council.

The Provincial Health Officer attended the fall meeting of the Dominion Health Council, at which many matters of an Interprovincial and Provincial nature were discussed. Among other presentations, the Provincial Health Officer presented a summary showing the serious disability caused by arthritis and the need for a study of this problem to determine the development of a suitable programme to prevent as much of this disability as possible. A special committee of the Dominion Health Council was set up to study the matter further, with instructions to bring in a report at the first meeting in 1945.

During the year the Provincial Health Officer was honoured by the appointment as one of four members of the Special Public Health Advisory Committee to the W. K. Kellogg Foundation. He was also elected as a member of the Governing Council of the American Public Health Association, and a member of the major committee of this Association known as the Committee on Administrative Practices.

Among the many distinguished visitors to the Provincial Health Offices in Victoria are to be noted Dr. George Buchan, of the British Ministry of Health, and Col. George Hayes, of the Alaska Territorial Health Department.

A great deal of credit is due to all those engaged in public health activities for their sincere and progressive interest in their work and their willingness to meet each new obstacle and find a method to overcome these many difficulties. This performance of duty is well beyond that which might be expected under normal circumstances and the advance in the public health programme has been possible only because of the faithful and whole-hearted co-operation of this group of public health workers.

Tribute must be paid to the many Departments of the Provincial Government which have worked in close co-operation with the Health Services. Notable ones among this group are the Departments of Public Works, Municipal Affairs, Lands, Fisheries, Agriculture, Provincial Police, Education, and Labour.

The help and co-operation received from the medical profession, teachers in the schools, Municipal Councils and School Boards, Women's Institutes, Parent-Teacher Associations, and other men's and women's organizations deserve special mention for the part they have played in furthering public health in the Province.

Further advances have been planned for the coming year and it is to be hoped that more technical personnel will be available to meet the increasing health demands of the people and the need for extension of health services throughout the Province, both on a local and a Provincial basis. The new Federal Department of Health and Welfare, it is anticipated, will provide valuable leadership, help, and consultative service which will further aid in the protection of the health of the people.

THE HEALTH OF THE PEOPLE OF BRITISH COLUMBIA.

The following is a brief summary of the health of the people of British Columbia, based on the statistical data available. The information used was that obtained from the registrations with the Division of Vital Statistics during 1944. As there are always a number of delayed registrations, the figures of which were not available at the time of writing this article, it will be seen that the figures herein are only *preliminary*. For instance, at the time of writing, January returns which will include some December figures have not been received. It is felt that a summary of this nature should be of considerable interest.

The health of the people of British Columbia is reflected only to a certain extent in the mortality figures for 1944 and care should be exercised in studying these, if correct impressions are to be gained. The preliminary death-rate in 1944 was 10.9 which was a decrease of 0.6 death per 100,000 population over the previous year. Again there is an increase in the actual number of deaths at ages 60 and over—6,024 in all. Over one-half (61 per cent.) of the total deaths in the Province were in this age-group—almost one out of every five deaths were of persons between the ages of 40 and 59; approximately 7 per cent. between the ages of 20 and 39, and 12 per cent. under 20 years of age.

There were 751 infant deaths (children dying under 1 year of age) in British Columbia in 1944. This figure represents 60 per cent. of the deaths under 20 years of age. The preliminary infant mortality rate was 37.6 per 1,000 live births, which is slightly lower than the 1943 figure compiled by the Dominion Bureau of Statistics. There were 48 maternal deaths in 1944, giving a provisional rate of 2.4 per 1,000 live births. This shows a slight increase from the 1943 rate, which was 2.1, but lower than that for 1942, which was 2.6.

Of primary importance in a study of this nature is the necessity to ascertain the leading causes of death. Causes of death naturally fall into certain broad groups. As was done in last year's report, "Diseases of the Heart" and "Diseases of the Arteries" have been grouped together to form one cause of death.

A study of the leading causes of death for all ages reveals that diseases of the heart and arteries were responsible for more deaths than any other condition, accounting for 3,231 in all. Cancer was the second leading cause of death; 1,325 persons died of this disease. The third cause of death was accidental deaths, and the fourth was tuberculosis; 532 persons died in the Province from tuberculosis in 1944. This gives a provisional tuberculosis mortality rate of 59.1 per 100,000 population. This shows a decline from the 1943 rate of 64.8. If Indian deaths are excluded the provisional tuberculosis rate becomes 41.7.

Pneumonia ranked fifth as a cause of death, followed by nephritis. Diseases of early infancy was the seventh cause of death and cerebral hæmorrhage ranked eighth. Diabetes ranked ninth and influenza tenth.

To gain a full appreciation of the mortality picture of the Province of British Columbia the effect of Indian deaths on certain specified diseases must be considered. In general, Indian mortality exerts little influence on the ranking of the leading causes of death in the age-groups 30 years and over. It is under 30 years of age that the most significant differences occur; 67 per cent. of all Indian deaths were under 30 years of age; 28 per cent. were under 1 year of age; and 43 per cent. were under 5 years of age.

Almost 30 per cent. of all Indian deaths were due to tuberculosis, over three-quarters of these deaths were among Indians under 30 years of age. Tuberculosis mortality figures and those of other diseases such as pneumonia and influenza are affected very unfavourably by Indian mortality. Indians are the wards of the Federal Government and so do not constitute a direct responsibility of the Provincial Board of Health. However, they cannot be ignored in a public health programme as long as they present a threat to the health of the rest of the people.

If a strictly accurate picture of the responsibility of the Provincial Board of Health is to be estimated, Indian deaths must be excluded from a study of this nature. Therefore the following statistics are exclusive of Indians. The figures must be analysed with an eye to both the cause thereof and the means of prevention to be of assistance to the Provincial Board of Health in its programme. A study of the chief causes of death of infants under 1 year of age reveals that prematurity ranked first, accounting for over one-third of the deaths in this age-group. Undoubtedly, improved prenatal and postnatal care could reduce this figure considerably. The second cause of death among infants was found to be congenital malformations. This cause does not respond to treatment as readily as many others, but improved prenatal care can exert favourable influences. The third cause of death among infants was pneumonia, and injury at birth was fourth.

Among pre-school children accidents were the leading causes of death, accounting for over one-quarter of the deaths between the ages of 1 to 4 years. Most of these deaths could have been prevented if more care had been taken by the parents. The second cause of death in this age-group was appendicitis and tuberculosis third.

Between the ages of 10 and 39 years the leading cause of death was accidental death. Many of these deaths are preventable as are those caused by tuberculosis, which ranked second. The Division of Tuberculosis Control of the Provincial Board of Health has in recent months greatly increased its case-finding which, with continued application, should ultimately, because of early diagnosis and treatment, reduce greatly the number of deaths due to tuberculosis.

The chief cause of death between the ages of 40 and 59 years was disease of the heart and arteries. The second leading cause of death in this age-group was cancer. It is unfortunate that these degenerative diseases should take such a heavy toll in these most productive years. Deaths from these diseases can be prevented or at least postponed until later years if diagnosed and cared for at an early stage. Accidental deaths ranked third in this middle-age group.

Diseases of the heart and arteries ranked first in the ages over 60. The second cause of death in this age-group was cancer and nephritis was third.

When the figures are examined for communicable diseases it is found that the 1944 figures in general compare favourably with those of previous years. Especially is this so in the case of measles. Also the situation regarding whooping-cough is improving. The 1944 figure of 122 deaths from influenza is well below the 1943 Dominion Bureau of Statistics figure of 189 but is still far above the 1942 figure of 78. The very existence of deaths from communicable diseases is a constant reminder that the methods designed to control and eliminate them must be continued without relaxation. The public health worker and private physician alike must be continually on the alert to discover the presence of communicable diseases and institute control measures. For further information regarding communicable diseases reference should be made to the Epidemiological Report of the Bureau of Local Health Services on page 19, where an analysis is made of increases and decreases in comparison with previous years.

The field of public health is continually expanding. To-day it is concerned not only with measures to prevent illness and premature death, but also with those designed to prevent premature crippling and invalidism. It must also plan means of lengthening the life of the people. Also its attention must be concentrated on reducing the number of deaths caused by degenerative diseases in people at the time of their maximum economic use to society. Now, more than ever, with an acute man-power shortage, it is doubly important that emphasis be placed on this aspect of public health. On account of the limitations of the statistical data at hand at the moment pertaining to British Columbia, little or no mention has been made in this article of the injuries which, all too frequently, disable; or of the many diseases which although not in themselves serious enough to kill do incapacitate, temporarily at least. Sufficient is now known about the common cold, for example, to place it as one of the most important causes of loss of time in industry. To mitigate such minor diseases much can be done by the general populace in practising good health habits, particularly in regard to having an adequate and varied diet, proper rest, exercise and relaxation. These are the fundamentals which must oft be reiterated, especially in war-time with the withdrawal of so many physicians for service in our armed forces.

The subject of this article tends to be misleading as the main emphasis is on the mortality picture in the Province rather than on the morbidity or sickness aspects of the health of the people. It is impossible to give an adequate analysis of the current health conditions of the people without statistics of the incidence of many of the common illnesses, especially those of the non-fatal type. It will only be after health insurance has been implemented that a true picture of the morbidity situation can be obtained.

BUREAU OF LOCAL HEALTH SERVICES.

J. S. CULL, M.D., D.P.H., ASSISTANT PROVINCIAL HEALTH OFFICER AND
DIRECTOR, BUREAU OF LOCAL HEALTH SERVICES.

The passing of 1944 brings to a close a year fraught with its full quota of difficulties and problems. Among others might be mentioned difficulties in

general administration under prevailing conditions, shortages of trained and qualified public health personnel to meet the demand, unexpected losses among public health personnel in the field at the present time, as well as the provision and maintenance of transportation for members of various Health Units and Public Health Nursing Services. However, these have come gradually to be accepted as part of the daily and monthly work of the Department. A considerable amount of progress and advance can be reported, as will be evidenced as the various sections of this Bureau of Local Health Services are reviewed.

PUBLIC HEALTH NURSING.

The report of the Director of Public Health Nursing is appended herewith and gives a broad picture of the activity in this phase of public health work in the Province, with the exception of that in the Greater Vancouver and Greater Victoria areas. The report also outlines the changes in personnel that have taken place during 1944, summarizes information relative to policies which have been established during the year, and also provides for public consumption information relative to public health nursing services in general.

It is gratifying to note that two new Public Health Nursing Districts were established in the Province during 1944. These were in the Cumberland district and the Nakusp district. In addition, the services of the Public Health Nurse stationed at Fernie were extended to include the Michel-Natal area, and those of the Public Health Nurse stationed at Langford to include the Colwood district. It is expected that the Fernie Public Health Nursing District will in the not too far distant future be extended south to the International boundary, and that similarly other areas will be included in the Esquimalt rural nursing services at Langford, so that in both cases the area included will be such as to make for an economic service and also to ensure that there are no districts which do not receive service in the territory through which the Public Health Nurse travels.

Due to the shortage of public health physicians, it was necessary in the late summer to ask one of the Public Health Nurses to assume the position of Supervisor in the Peace River Health Unit, and as such also act in the capacity of Acting-Director of the Unit. This will be referred to in more detail under the section on Full-time Health Services.

It was mentioned in last year's report that it was hoped that the graduation of the public health nursing class in the spring of 1944 would result in some easing of the shortage of this type of personnel, and while this was partially the result, nevertheless, at the present time there are still districts where public health nursing services are desired, but such personnel are not available to establish these services. Nevertheless, while this is unfortunate to a degree, at the present time it does augur well for the future of Public Health Nursing Services in British Columbia, and the provision of this type of service to a still higher percentage of the population than at the present time. As closely as can be estimated, it is of interest to note that more than 80 per cent. of the population is supplied with Public Health Nursing Service in British Columbia.

Again, the annual "Institute for Public Health Workers" was held just prior to the Easter holiday, following in a general way the programme of last year, with more time being allowed for group discussion. As was the case last

year, all material was presented either by Health Unit personnel or the technical staff of the Provincial Board of Health. This year, the Public Health Nurses were not only given an afternoon to meet by themselves with the Director of Public Health Nursing, but also another afternoon to discuss records and record systems, and bring in such recommendations which they, as a group, considered worthy of consideration and practical from a field worker's point of view. The Sanitary Inspectors from the various Health Units also met as a group with the Public Health Engineer and discussed the problems related to their particular field of activity. The Health Unit Directors met with the Provincial Health Officer and discussed matters of policy and administration. Later, an opportunity was provided for a meeting of Health Unit Directors and Sanitary Inspectors with the Provincial Health Officer. This proves a splendid opportunity for discussing all related problems of local health services, and always results in the solution of a number of problems, and interchange of examples of practical ingenuity which have been tried out on a local level, and the clarification of interpretation of legislation and policy. It is planned to continue in general with the same type of programme, subject only to minor variations because of the splendid reception which it has enjoyed by those attending the Institute.

The "News Letter" from the Provincial Board of Health to the Public Health Nurses throughout the Province has been continued as a medium of instruction and education. It continues to be a valuable medium for the exchange of information between the Department and the Public Health Nurses in the field. There is still, however, much room for improvement in the matter of participation in its activities by the Public Health Nurses throughout the Province.

The effort to standardize salaries for Public Health Nurses and also establish a salary schedule is, perhaps, one of the most important advances to be reported for the year 1944. Further details will be found in the appended report of the Director of Public Health Nursing. Efforts are continuing to endeavour to surmount some of the technical difficulties with regard to a plan for superannuation for Public Health Nurses.

The former Director of Public Health Nursing, Miss Heather Kilpatrick, left early in the year to offer her services for work in foreign countries under the auspices of the United Nations Relief and Rehabilitation Administration. Miss Kilpatrick was the first Director of Public Health Nursing in this Province, and during her four years of association with the Provincial Board of Health did a great deal of organizational work and laid the foundation for many of the policies in effect to-day. For her efforts in this regard much credit is due her. Miss Dorothy Tate, formerly a Consultant in Public Health Nursing, assumed the position of Acting-Director of Public Health Nursing in May, and the position of Director in October. Commendation is due Miss Tate for the energetic enthusiasm and effectiveness with which she has both handled and controlled the numerous problems which have come to her desk during this difficult year.

SCHOOL MEDICAL SERVICES.

With reference to the medical inspection of school pupils, it was again deemed advisable in the school-year 1944-45 to continue to examine only certain

grades of enrolled pupils. This makes the third school-year that this policy has been in effect, and by the end of June, 1945, all school children will have been examined since the policy was first instituted. This procedure was made necessary as has been outlined in previous reports because of the continued shortage of physicians and also the heavy burden of extra work which all of them in civilian practice have been carrying.

The joint report for the school-years 1941-42, 1942-43, and 1943-44 is now available, and shows for the first time a breakdown of the pupils in the various grades on a basis of a physical status rating. In addition, information is also available now for the first time on the relative protection for the school-age population against certain preventable diseases, as a result of widespread immunization by Medical Health Officers, School Health Inspectors, and public health personnel. While much has been accomplished along this line still much remains to be done. The interpretation of these figures concerning physical status and immunization is discussed in the joint Medical Inspection of Schools report referred to above.

For some years now, an increasing number of individuals associated with medical inspection of school children and health work in schools have questioned the value of the policy of having school pupils examined regularly by a physician on an annual basis. It is a programme on which much time, effort, and money are spent here, and if the same result, whether that result be tangible or intangible, can be secured by having Public Health Nurses, or teachers, or both, carry on an inspection programme, with referral for specific reasons to the School Health Inspector, it seems only logical that serious consideration should be given to the wisdom of modifying what is now tending to become, and be considered, an antiquated form of school health service.

A word of appreciation is due the School Health Inspectors for the interest which they have shown and their co-operation during the year just ended. The majority of these are medical practitioners and the willingness with which they have given up some of their time to investigate, on request, reports of outbreaks of communicable disease in some of the outlying schools of their district has been much appreciated.

NOTIFIABLE DISEASES.

A table on pages 90-93 shows the number of reported cases of notifiable disease. The total number reported—namely, 25,076—represents a slight decrease from that reported during the previous year. In 1943 the figures showed a total of 27,259 cases reported. The year 1944 has thus continued to be a very favourable one for British Columbia, in so far as communicable disease is concerned. The movement of population, together with the overcrowding which exists in all the large centres throughout the Province, has not decreased but rather, perhaps, has increased if anything at all, and in the face of this it is rather surprising that not only has the total figure for notifiable diseases gone down, but, in addition, there has been no widespread outbreak of any one particular communicable disease.

The figures for chicken-pox, encephalitis, erysipelas, influenza, scarlet fever, septic sore throat, and whooping-cough show only minor changes which are relatively unimportant. On the other hand, dysentery in all forms, after

showing a sharp rise from 39 cases in 1942 to a peak of 143 cases in 1943, showed a decline to 79 cases for 1944. Measles, also, showed a spectacular drop from over 8,200 cases for 1943 to just under 1,500 cases for the year just ended. Poliomyelitis (infantile paralysis) increased from 8 cases the previous year to 18 cases during 1944. Again, this Province was extremely fortunate in so far as this disease was concerned, because there were a considerable number of cases in both the Province of Alberta and the State of Washington during the year, with a very widespread epidemic being prevalent through the entire eastern half of the United States. Mumps showed a very considerable decline from more than 4,700 cases reported last year to 1,657 cases for the year just ended. Because of the very poor and incomplete reporting of the minor communicable diseases, the rise in rubella (German measles) from 546 cases last year to 1,180 cases in 1944 is not thought to have any great significance with regard to a very marked increase occurring during 1945.

Cancer showed a slight increase in the number of cases reported but, as was pointed out last year, this figure has little or no significance since we have no accurate statistics as to the incidence of cancer in the general population of this Province. Cerebrospinal meningitis reached a low of 5 cases in the year 1939. This was followed by a rather sudden rise to a total of 138 cases in 1941. Since that time, the number of cases reported annually has decreased and during 1944 only 47 cases were reported. Whether this is due to an increased number of carriers in the general population, coupled with an increased number of individuals who have been automatically immunized through contact with carriers, or whether this is a downward cycle of the disease incidence which would have taken place irrespective of the conditions which have held during the past four or five years, is impossible to say at the present time. However, the fact that the incidence of cerebrospinal meningitis has declined in England in recent years after a preliminary rise early in the war, in spite of the housing shortage and the terrific overcrowding which has been the unfortunate result of war over there, makes one think that the latter supposition may be worthy of more consideration than would ordinarily be given to it.

Four cases of botulism were reported during the year. Three of these were fatal and all three of them were members of one family. This was a most unhappy and unfortunate experience, and one that could perhaps have been prevented with a little greater appreciation of the dangers of home-canned food, where due precaution is not taken for its safe preservation. There would appear to be still some considerable need for widespread information concerning precautions to be taken with the home preservation of certain food products, and other precautions to be observed on the opening of food products which may indicate by appearance, or odour, the possibility of contamination with pathogenic organisms of the food-poisoning type.

Diphtheria continued in decline and showed a 40-per-cent. drop from 28 cases last year to 17 cases in the year just ended. It is to be hoped that the widespread immunization against this disease which has been carried on during the past two or three years will soon result in a still greater reduction in the incidence of this preventable disease. The figures on deaths from diphtheria, so far only available to the end of October, show that during 1944 there have been two deaths.

While the table shows 22 cases of paratyphoid fever, it should be pointed out that 11 of these were gastro-intestinal outbreaks of the *Salmonella typhi murium* type. Pending further discussion, on revision of the List of Notifiable Diseases, outbreaks of this type of infection have been listed under the heading of paratyphoid fever. It is felt that a more correct listing would show the major heading of Salmonellosis, with paratyphoid fever, typhi murium, and other varieties as sub-headings.

Typhoid fever showed a reduction in the number of reported cases from 63 for the previous year to 34 for 1944. Fortunately, no outbreak occurred similar to that of the previous year at Vernon. The cases of typhoid fever that did occur were not lumped in any one area of the Province, but rather were scattered throughout the various centres of population.

One fatal case of tularæmia occurred at Williams Lake. This was a most interesting occurrence since the unfortunate patient obtained the infection from a coyote. This animal is only occasionally the cause of this disease, wild rabbits being a much more common source. This man happened to have an abrasion on his finger which apparently became contaminated during the time that he was skinning the coyote.

For some two years the regulations of the Provincial Board of Health for the control of communicable disease have been undergoing revision. These regulations have been drawn up in a way which it is hoped will prove to be practical for both reference and application. They represent a very considerable difference of opinion with the existing regulations which were drawn up many years ago. However, the variations in the isolation and quarantine periods and procedures are based, as far as can be determined, on scientific facts and principles. It is expected that the new regulations will be available for distribution very early in the new year.

FULL-TIME HEALTH SERVICES.

This section of last year's report made particular reference to the formation of the Central Vancouver Island Health Unit as a noteworthy advance in local health administration in British Columbia for 1943. A similar step was made during the year just ended in that the North Okanagan Health Unit commenced operation in October, 1944. The plans for this Health Unit were completed early in the year in so far as the City of Vernon was concerned, but again, owing to shortage of trained and qualified personnel it was not possible to commence operations until the fall of the year. As a matter of fact, because of the urgency of a number of problems in and about Vernon, coupled with the fact that this was the scene of a large army camp, it was finally decided to transfer Dr. J. A. Taylor, Director of the Peace River Health Unit, to Vernon, in order to commence the full-time local health service for this section of the Province. We were fortunate enough to secure the other personnel required, and at the present time this North Okanagan Health Unit operates with a staff of Dr. J. A. Taylor, as Director, two Public Health Nurses, a Sanitary Inspector, and a Statistical Clerk. The headquarters at the present time are located on the second floor of the City Hall in Vernon. This Health Unit, at the present time, serves only the City of Vernon and the surrounding unorganized rural territory, but plans are

under way so that during the coming months the service will be extended north to include Armstrong, Enderby, Salmon Arm, and, eventually, east to Revelstoke. When this becomes a fact, it will represent the fruition of a plan envisioned many years ago by the former Provincial Health Officer, the late Dr. H. E. Young, whereby the entire Okanagan Valley would some day enjoy the benefit of a full-time local health service. The completion of this plan will be watched with interest by many who are familiar with the early history of public health in the Okanagan Valley, and which in reality dates back to the formation of the Kelowna Rural Schools Health Association in 1928. This enthusiastic group of public-spirited citizens have no doubt watched the expansion of public health work from their original efforts with much interest. Credit is due the original members of this Association. As a matter of fact, some of the original members are still active in the Association and it is always a pleasure to discuss health work with them, for their ideas and outlooks are just as progressive and up-to-date to-day as they no doubt were some sixteen years ago.

The area served by the Central Vancouver Island Health Unit has now been extended to include the cities of Alberni and Port Alberni and the unorganized rural territory in the immediate environment. Much credit is due Dr. J. M. Hershey for the splendid educational programme which was carried on in order to demonstrate the value of full-time local health service. The staff of this Health Unit have made very splendid progress during the one year of operation, and this is perhaps most evident in the increase in immunization and the improvement in community sanitation. The most interesting development is the formation of a Farmers' Co-operative Dairy Association whereby ten of the twelve producer-vendors in the district have joined together on a co-operative basis in order to establish a pasteurization plant and a common distribution system. The formation of such a co-operative or municipally owned plant would appear to be the logical method whereby pasteurized milk may be made available to the people living outside of the larger centres of the Province. The progress of this Association, the first of its type in the Province, will be watched with much interest.

The Okanagan Valley Health Unit serves that section of the Province from Oyama in the north to, and including, Penticton, Naramata, and Kaleden in the south. Special mention was made in last year's report on the fact that this Health Unit had received an award in the 1942 National Health Honour Roll. This honour was repeated when, early in 1944, it was announced that another award in the National Health Honour Roll for 1943 had been made to the Okanagan Valley Health Unit. When it is remembered that such awards are made not necessarily to the healthiest community, but rather for the effectiveness with which the community problems are met, one realizes the credit that is due the staff of the Okanagan Valley Health Unit. Not only has this group of public health workers carried out an efficient programme in the area served, but they have also sold the programme to the people of their area. The result is that the people are thoroughly in support of, and in accord with, the public health work that is being carried on for their protection.

The Prince Rupert Health Unit has also continued to carry on a good, generalized public health programme. Venereal disease and tuberculosis control

work, and community sanitation, coupled with improvement of sanitation in the salmon-canneries on the Skeena River, appear to be the major problems with which this Health Unit is faced.

It was mentioned earlier that it was necessary to transfer Dr. J. A. Taylor, former Director of the Peace River Health Unit, to Vernon in order to open up the North Okanagan Health Unit. Nowhere in Canada was it possible to secure the services of another trained and qualified public health physician to assume the position of Director of the Peace River Health Unit. Finally, as a war-time expedient, and on a temporary basis, Mrs. Pauline Yaholnitsky, Public Health Nurse at Quesnel, was asked to assume the position of Supervisor of the Peace River Health Unit, and as such to carry on the duties of Acting-Director. Fortunately, with the completion of the Alaska Highway, the population of Fort St. John and Dawson Creek and the immediate surrounding areas decreased considerably, and at the same time there was a reduction in the problems associated with the overcrowding which had been so much in evidence there previously. The lack of a full-time medical health officer did not, therefore, constitute quite such a difficulty as it would have during the preceding year. Nevertheless, to step from public health nursing and assume the duties of directing a Health Unit represents a very dramatic change, and particularly when one has not had any administrative experience. Mrs. Yaholnitsky's willingness to undertake this difficult task and her commendable spirit of courage and enthusiasm is not only admired, but appreciated, by this Department. Unfortunately, the shortage of Public Health Nurses is reflected directly in the number on the staff of the Peace River Health Unit. Up until the end of this summer there were four Public Health Nurses on the staff. At the present time, when there should be at least four, in addition to the Supervisor, there are only two. It is appreciated and realized that this constitutes a terrific overloading of these nurses, including the Supervisor, but, unfortunately, little can be done about it until such time as the shortage of Public Health Nurses becomes less acute.

The water-supply for the Village of Dawson Creek, and which was mentioned in last year's report, was completed early in 1944. Installation of a sewerage system is under way at the present time and will likely be completed early in 1945. This was made possible through co-operation between the Provincial and Federal Governments. These two installations represent a very considerable advance in community sanitation for Dawson Creek, and will go a long way in eliminating many of the sanitary problems which have existed there for some considerable time.

Again, the many part-time Medical Health Officers throughout this Province are to be congratulated for their splendid co-operation and help during the past year. The amount of time and effort which some of them give to public health work and the health problems of their area is very gratifying indeed. It is unfortunate that there is not sufficient staff in the Central Office of the Provincial Board of Health to make it possible for the senior officials to visit the local areas throughout the Province at least once a year, in order to discuss problems with these part-time health officers. It is known that such visits would be appreciated by the health officers in the field, and would also prove to be an excellent way of clarifying many of the problems which confront them

from day to day. These problems are frequently easily solved, but worrisome to the part-time health officer who has not had public health training.

PUBLIC HEALTH EDUCATION.

An increasing consciousness on behalf of the people in regard to all phases of group and community health was responsible for a very busy year in the field of public health education. All senior officials, both from the various Divisions and the Central Office of the Provincial Board of Health, on numerous occasions have met and held discussions with community groups, including Municipal Councils and School Boards, Parent-Teacher Associations, Boards of Trade, and other official and voluntary groups.

The idea put forth in last year's report in relationship to a Health Educator being a member of the staff of Health Units would appear to be coming closer to accomplishment. This year the Provincial Board of Health has provided field training in the Central Vancouver Island Health Unit for a hand-picked teacher who has chosen public health education as her future vocation. This individual has just recently left to secure postgraduate training in public health education through the medium of a Fellowship from the W. K. Kellogg Foundation. She will return in one year's time and assume the position of Health Educator in one of the Health Units. The success of this experiment will be watched with a great deal of interest.

A Junior Public Health Educator was added to the staff this year with a specific purpose in mind. The person picked has had Library experience, as well as being a teacher, and it will be her function to reindex the Library of the Provincial Board of Health and its various Divisions, and then to develop such techniques and procedures as will best enable her to act as a liaison between all available sources of education material in the Central Office and public health workers in the field. It is too early as yet to make any comment on the success of this new policy.

The usual series of lectures to the students at the Provincial Normal School in Victoria were given in the spring of 1944. These were given by senior technical officials of the Provincial Board of Health, and covered among other things public health administration in British Columbia, local health services, public health nursing, tuberculosis control, venereal disease control, vital statistics, and community sanitation with particular reference to the rural areas of the Province. All of the senior technical officials of the Provincial Board of Health have continued to act as voluntary lecturers to the Public Health Nursing students at the University. In addition, lectures were also given to the Social Service students at the University.

Some four years ago a series of lectures was arranged for the student police constables at the Training School of the British Columbia Provincial Police. These lectures at that time dealt primarily with water-supplies, milk-supplies, and sewage-disposal, and were given by our Public Health Engineer. However, two years ago it was felt that a more broad series of instructional lectures should be given and arrangements were made whereby other phases of public health would be covered. These lectures were continued this year and included talks on public health administration in British Columbia, tuberculosis and

venereal disease control, vital statistics and all phases of rural sanitation. In addition, a special series of lectures was arranged for a group of officers and senior constables of the British Columbia Provincial Police which dealt primarily with sanitation in new rural areas and venereal disease control.

Miss Baldwin, Consultant in Nutrition, has carried on a very extensive and energetic programme on health education in the field of nutrition during this year. Local Nutrition Committees and study groups have been formed, surveys have been made in various parts of the Province, and a wealth of nutritional information given to the people by word of mouth, through pamphlets, and by motion-picture film. The appended report by Miss Baldwin gives further details of the variety of work that has been carried on in this field of public health.

No increase in the supply of public health literature has taken place as yet. Copies of many of the more worth-while publications are not available, although for a few of them we have secured permission to reprint them. A considerable number of letters to expectant mothers has again been sent out during the year. This has again been made possible through the co-operation of the Canadian Welfare Council. During 1944, more than 4,383 prenatal letters were sent to 467 expectant mothers who requested this service. Postnatal letters covering the first year of the baby's life were sent to 3,066 mothers who requested them; a total of almost 36,792 postnatal letters being forwarded. Requests for letters covering the pre-school ages totalled 823, while those for the school-age period totalled 155. It must be pointed out that the above figures only relate to the area outside of the Greater Vancouver Metropolitan Health area, since requests for letters from people of this area are handled locally.

It is gratifying to note that the National Film Board of Canada is investigating the whole field of public health films, since this may be the means of producing, on a co-operative basis, a number of really worth-while films early in the post-war period.

PREVENTIVE DENTISTRY.

The situation with regard to preventive dentistry remains identical with that of last year. In other words, the majority of the local dental clinics which have functioned in past years were still unable to carry on during the year just ended. In some cases there are no local dentists, while in others the dentists have been so busy as not to be able to find time for children's preventive clinics. In one or two instances, dentists who are particularly interested in this phase of the work have given some of their time in order that clinics might be carried on. The interest of these particular dentists in preventive work is much appreciated. It has still been possible to continue our arrangements with one of the Victoria dentists to carry on a limited amount of work on a weekly basis in the Langford area, just outside of the Greater Victoria district.

PUBLIC HEALTH ENGINEERING.

The full report of the Public Health Engineer is appended and shows both the variety and the volume of activity under this phase of the work. During the year there was added to the staff a Consultant in Food and Milk Control, who has had basic training in Veterinary Science, and also a senior Sanitarian

who has had not only experience as a Sanitary Inspector in a Health Unit, but also in the construction business. These two new staff members will be of considerable assistance to the Public Health Engineer in relieving the burden on him in so far as non-engineering sanitation problems are concerned.

No known cases of clam and mussel poisoning occurred during 1944, but the joint survey between the Department of National Health and Welfare, the Fisheries Research Board of Canada, and the Provincial Board of Health indicated the advisability of continuing the ban on the taking of clams and mussels on the west coast of Vancouver Island. It is of interest to note here that the State Health Department of California recently extended their ban indefinitely on the taking of mussels. The ban normally was released on October 31st, but was extended indefinitely this year because of toxic mussels after this date producing illness in the individuals who consumed them. The survey of canneries along the coast which was commenced last year was continued during the summer of 1944, and there would appear to be reasonable assurance that an improved standard of both sanitation and housing will result from these surveys. The discussion with cannery officials on the recommendations arising out of the survey has resulted in a better appreciation of all matters and points of view related to cannery sanitation.

Some indication of the appreciation of the consultive public health engineering advice available through this Department is given by the increasing number of municipalities seeking advice on all matters which have public health engineering implications.

REPORT OF THE DIRECTOR OF PUBLIC HEALTH NURSING.

MISS DOROTHY E. TATE, R.N., B.A.Sc., M.A.

Encouragement is necessary in carrying on any type of work—the encouragement that is experienced by progress, and that experienced by a piece of work done in spite of difficulties. A review of the past year's work affords satisfaction. The people participating in the programme, the programme itself, special features of it and future plans are the nucleus of this review.

PUBLIC HEALTH PERSONNEL.

The appointment of a Public Health Nurse in Saanich in 1917 was the beginning of a service which has continually expanded. In the Province, exclusive of Greater Vancouver, to-day there are fifty-three Public Health Nurses, two Consultants in Public Health Nursing, and a Director. Practical assistance and consultative service is carried on in the field by a specialized worker from the Division of Tuberculosis Control and the epidemiological workers attached to the Division of Venereal Disease Control. Two Victorian Order of Nurses assist in the programme by carrying on a completely generalized service, along with the bedside and instructive service with which they are usually associated.

The changes in the staff of Public Health Nurses to maintain the field positions are due to the following diverse reasons: Two Public Health Nurses opened new districts; two resigned to join the services; one resigned to be

married; one resigned for further study; one resigned because of illness; one resigned to make her home in another Province; two registered nurses with temporary appointments were replaced by qualified Public Health Nurses; two transferred to take special courses and returned to the field as specialized workers; five transfers took place when moves were made from one area of the Province to another; eight new members joined the field staff; one registered nurse was appointed temporarily. Therefore, twenty-five public health workers were directly affected in order to maintain the minimum of public health nursing personnel in the districts.

The resignation of Miss Heather Kilpatrick, who had filled the position of Director of Public Health Nursing for four years, was the first one to affect the hopes of a year ago that there would be a director and four consultants. Miss Dorothy Tate, who had previously been Consultant in Public Health Nursing, was appointed to the position. Miss Helen Carpenter, Consultant, Public Health Nursing, who had made a definite contribution to the programme, resigned to accept a Rockefeller Fellowship to attend Johns Hopkins. Mrs. Isabel Foster (née Loucks) was welcomed as a successor to Miss Carpenter. Mrs. Foster completed the Public Health Nursing course at the University of British Columbia, obtaining the degree of Bachelor of Applied Science in 1940. After graduation, she held a position on the staff of the Greater Vancouver Metropolitan Health Committee. The following year she was employed by the Cowichan Health Centre, Duncan, leaving there in 1942 to accept the position as Public Health Nurse in Cranbrook. In 1943, Mrs. Foster was awarded a Fellowship by the Commonwealth Fund. After a year's study at the Johns Hopkins School of Hygiene and Public Health, Mrs. Foster received her Master of Public Health degree. This was followed by field experience in the States of Maryland, Tennessee, Mississippi, and New York.

Miss Monica Frith, who has returned to British Columbia following the completion of a Commonwealth Fellowship, is a welcome addition as Consultant, Public Health Nursing, under the Provincial Board of Health. Miss Frith completed the double course in Public Health Nursing at the University of British Columbia in 1940. After graduation she was employed as Public Health Nurse in the rural Kelowna area until 1942, when she accepted a position in the Creston Valley Public Health Nursing District. In 1943, Miss Frith was awarded a Commonwealth Fellowship to attend the School of Public Health at the University of Michigan in Ann Arbor. Following the year's work at the University, an observation period in the State of Michigan was provided by the W. K. Kellogg Foundation. Following receipt of Master of Public Health degree, she obtained further field experience in the States of Tennessee, Mississippi, Maryland, and New York.

Stabilization of any service is difficult with many changes in personnel. For four years the percentage of changes has been high. With the staff changes, greater importance had been placed on assistance and stabilization through supervision. Unfortunately, the Consultant's group have been affected as well.

PROGRAMME.

Public health nursing activities continue to extend throughout the Province. The extensions now include the Arrow Lakes district and Cumberland and district, Colwood was included in the Esquimalt Rural District, and Michel-Natal in the Fernie Public Health Nursing Service. The programme carried on in these areas, as in others, is outlined as follows:—

MATERNAL.

Prenatal—

- (1.) Getting in touch with expectant mothers to assist them in securing medical and dental examination and supervision early in pregnancy.
- (2.) Interpreting the doctor's orders; explaining details of nutrition.
- (3.) Advising adequate clothing for mother and baby, preparing those in the home to receive mother and baby on return from hospital.

Postnatal—

- (1.) Helping the family to carry out specific medical advice for the mother's and baby's care.
- (2.) Stressing the value of breast-feeding the baby.
- (3.) Stressing the importance of the postpartum physical examination.

INFANT AND PRE-SCHOOL.

- (1.) Providing suitable environment for the baby by the demonstration in the home of bathing, making the bed, preparing the feeding when on a formula.
- (2.) Assisting in the supervision of the baby in order that normal physical and mental growth may be maintained.
- (3.) Advising medical care as a preventive and curative measure.
- (4.) Assisting in the control of communicable diseases through teaching the importance and the value of immunization, and teaching recognition of early symptoms of disease.
- (5.) Assisting the family to carry out general and specific instructions concerning early child care and training.
- (6.) Establishing and carrying on child health conferences, bringing information on child care to more mothers.

SCHOOL.

- (1.) Visits to the school on a planned schedule—
 - (a.) To confer with teachers, parents, and selected pupils.
 - (b.) To promote the maintenance of a physically healthful school environment.
 - (c.) To give instruction and assist in plans for physical examination and first aid.
 - (d.) To make additional visits for communicable disease control.
- (2.) Contact with the home—
 - (a.) To follow up and explain defects discovered through physical examination of pupils.

- (b.) To assist in control of communicable disease and to give advice concerning other public health problems in the home.
- (3.) Co-ordination of public health nursing activities for school children with all other health services in the community.

ADULT.

- (1.) To teach the fundamentals of personal hygiene in order to assist in the prevention and retardation of disease specific to adult life.
- (2.) To teach the importance of personal hygiene in community health.
- (3.) To encourage early treatment of defects.

COMMUNICABLE DISEASE CONTROL.

- (1.) Acute communicable disease—
 - (a.) To assist in making available specific immunizations and to encourage and educate groups to avail themselves of the opportunity to be immunized.
 - (b.) To carry out proper precautions to prevent the spread of infection.
 - (c.) To interpret the regulations governing quarantine and isolation.
- (2.) Tuberculosis—
 - (a.) To assist in finding tuberculous individuals.
 - (b.) To educate all contacts of tuberculous patients of the necessity of examination and to assist them in obtaining these examinations.
 - (c.) To arrange for necessary nursing care, to teach through demonstration, and to supervise care of patient given by responsible persons.
 - (d.) To teach patient and contacts the importance of personal hygiene and the precautions to be taken to prevent the spread of infection.
 - (e.) To assist in the integration of local and Provincial health and welfare services so that patient and family may make emotional and social adjustments necessary to a long-term communicable disease.
- (3.) Venereal disease—
 - (a.) To promote reporting of infected individuals and to report results of epidemiological investigations of early infections and contacts and secure medical examination and supervision for them.
 - (b.) To assist in preventing the spread of infection by teaching patient and groups the scientific facts of the disease.
 - (c.) To promote continuity of treatment by explaining its value and by interpreting medical directions.

BEDSIDE DEMONSTRATIONS.

- (1.) To assist in securing early medical diagnosis and treatment.
- (2.) To teach responsible persons nursing care of patient through demonstration and supervision and arrange for special care for patients with special types of disabilities.

- (3.) To realize the necessity of convalescent care and the value of rehabilitation for the patient so that as local and Provincial facilities increase they are made available to the patient.

SANITATION.

- (1.) To give advice in securing safe milk, safe water, adequate sewage-disposal, and in proper food-handling methods in the home.
- (2.) To refer problems dealing with sanitation in the home, school, or community to local sanitarian or the Division of Public Health Engineering.

Up to this point some of the phases of public health nursing have been briefly outlined. In addition, there are other phases which are receiving concentration in certain areas now, and will be expanded in other areas as personnel is available and problems arise. Examples of these are cancer, industrial hygiene, mental hygiene, adult education, accident-prevention, nutrition, oral hygiene, and public health education.

EDUCATION.

In order to maintain a standard of service the nurses participating should be qualified. Once the qualifications have been attained it is a continual educational process to keep up with the latest information, to modify programmes, and be able to help in the formation of policies for field practices. The Institute for Public Health Workers has been this year, as in the past, the most practical form of in-service education. Reviews of actual field practices made a lasting impression on the Public Health Nurses as did several papers reviewing progress of special services. The adoption of new forms to simplify recording were received with interest and later accepted into field practices with varying degrees of modification, as were also the practical suggestion in the field of sanitation and nutrition. Results of past experience led those arranging for the Institute to plan discussion groups where Health Unit Directors, Public Health Nurses, and Sanitary Inspectors may reach a solution to their difficulties as a result of group thinking.

The appointment in September of Miss Edith Stewart as Public Health Educator opened up a new field of education for the field staff. Not only are the library resources of the Provincial Board of Health more accessible, but the Provincial Library and the Open Shelf Library have been made available too. The increase in resources is continuing in our own library because there is some one to keep up to the current material in a wider range of books and journals and bring them to the attention of the field staff.

The "P.H.N. News and Views" continues to function as the means of spreading information and changes in programmes. Book reviews and material dealing with public health activities Provincially or Internationally are presented by this medium. Information which has a Provincial-wide significance though gathered specifically at the request of individuals is spread by the News Letter; material for the Reference Manual, which includes services given by allied agencies, co-operative efforts of health and other community groups has its first general circulation to public health staff through the News

Letter. The letter is flexible; it is expected to grow in scope and use, depending on the demand for and value of material circulated.

Groups of Public Health Nurses hold district meetings from time to time throughout the year to discuss pertinent topics of interest to the particular group. Their efforts have made available contributions to public health nursing in the rural field. A discussion of the tuberculosis programme, school programme, and also infant welfare problems, which have or will be appearing in the News Letter, are examples of group accomplishments.

The consultants, who carry on supervisory duties as well, have had to spread their services much more extensively than was formerly anticipated. Acting as interpreter of Provincial policies and bringing field impressions and problems to the central office is one of their important duties. Education by consultants provides assistance to the public health nursing field staff which has a bearing on the programme carried on in the field.

UNIFORMS.

The final adoption of a uniform for Public Health Nurses brings to a head the insistent requests of the field staff for a uniform acceptable to them and to headquarters. The medium blue tailored suit, white shirt-waist, navy felt tams, and brown oxfords have met with approval. The nurses are gradually adopting the new uniform in lieu of the former varied ones. Financial aid by the Provincial Board of Health has had, undoubtedly, a bearing on the anticipation and pleasure with which every Public Health Nurse looks forward to the time when she will be one of a group dressed in a distinctive uniform of the public health nursing field staff.

SALARY SCHEDULE.

A salary schedule has materialized after several years of preliminary planning. It recognizes basic preparation necessary before a Public Health Nurse is appointed in a permanent position. The first year of a generalized practical experience is a probation period for which the annual salary is \$1,380. Increments are given for years of service and efficiency at the rate of \$60 at the completion of the first, second, and third years of permanent service, and again at the fifth, seventh, and ninth. Length of service after ten years is recognized by further increases every five years. A Public Health Nurse may, however, change her status by progressing to a senior position for which there is a salary increase in recognition of increased responsibility. Because of varying circumstances in each local area the schedule is not fully in operation, but strides have been made because of the interest and foresightedness of some public health nursing boards in recognizing the system as a means of stabilizing and unifying public health nursing personnel.

The coming year holds promise of having the salary schedule in full operation and the uniform adopted by every Public Health Nurse. Simplification of records, recognized as an asset, has been discussed and drawn up and will be brought to the field before very long. A long needed Manual on public health nursing procedures has been started and will be circulated section by section till every phase has been covered. It will never be static but will be subject to revision and additions, as programmes change and emphasis within these programmes change.

The past year has been one of credit to every Public Health Nurse in the field. That the standards of a public health programme have been maintained, even advanced in some fields, is due to the co-operation and combined efforts of every one.

REPORT OF THE CONSULTANT IN NUTRITION.

MARY F. BALDWIN, B.Sc. (H.Ec.).

The advances which have been made in the science of nutrition in the past few years fire the imagination. There is, however, a gap between scientific knowledge of nutritional principles and their practical application. The extent of this gap and its effect on the health of the people are brought home to us when we study dietary surveys and examine the medical records of young men and young women called up for defence training. The aim of the Federal, Provincial, and local nutrition programmes outlined in this report is to fill this gap and help make Canadians healthier through the application of well-established principles of nutrition.

ORGANIZATION FOR NUTRITION EDUCATION.

FEDERAL.

The Dominion Government in 1941 established Nutrition Services—now the Nutrition Division under the Department of National Health and Welfare. This Division acts as a clearing-house for nutritional information, serves as a consultative service for other departments of Government, sponsors and advises on nutrition research, and carries out the inspection of feeding facilities in war industries. The problems of the various Provinces are brought to the attention of the Federal division through an advisory body known as the Canadian Council on Nutrition. The Provincial Health Services of each Province are represented by a member on this council. The member for British Columbia is the Nutrition Consultant of the Provincial Board of Health. The Provincial Health Officer is a member *ex officio*.

Late this year the Nutrition Division appointed a regional representative to cover Alberta and British Columbia. This representative will carry on the inspection of food facilities in war industries, be prepared to offer refresher courses to such groups as Public Health Nurses and teachers and generally serve as liaison officer between the Federal department and the Provincial committee.

PROVINCIAL.

Organization for nutrition education in British Columbia was extended in 1942 with the appointment of a Nutrition Consultant to the Provincial Board of Health and the setting-up of a Provincial Nutrition Committee. This committee is under the chairmanship of the Provincial Health Officer. The members of the committee are representatives of Provincial organizations and groups interested in nutrition. The Nutrition Consultant of the Provincial Board of Health serves as secretary of this committee.

The function of the Provincial committee is to co-ordinate nutrition work done in the Province and advise on the future expansion of a broad programme

of nutrition education. The nutrition services of the Provincial Board of Health, the British Columbia Division of the Red Cross Society, and the Metropolitan Health Committee of Vancouver are co-ordinated through this committee. Each of these bodies employs a Nutritionist, and each Nutritionist, in order to avoid duplication, has a definite geographical area of the Province to work in.

There is, as well, a technical advisory committee to advise on technical problems.

LOCAL.

Local nutrition committees have been formed in a number of British Columbia communities. These committees meet with the Nutritionists in their respective areas and advise regarding methods of carrying on a programme of nutrition education in their community.

REPORT OF PROVINCIAL BOARD OF HEALTH NUTRITION SERVICES IN 1944.

Work started in 1943 was extended in 1944. A second Nutritionist was appointed by the Provincial Board of Health from September to December to assist with the field-work.

SURVEYS.

Studies of eating habits, made first in the Okanagan in 1943, were made in six Kootenay centres and in six centres on Vancouver Island. A recheck was made on larger groups in three Okanagan centres where the original studies were made. Surveys were also undertaken in two Okanagan centres not checked before. These surveys were made through the schools in each case.

The survey results were evaluated according to a score sheet prepared by the Nutrition Division in Ottawa and, although the surveys were by no means complete, they gave much valuable information. Total scores reached in the various centres were very similar, although use of the different food groups varied widely.

Scores for cereals were uniformly low, due to the fact that people consumed such large proportions of refined cereal products in preference to whole grain. On the other hand, scores for meat were uniformly high. The people in British Columbia seem to consume more than adequate quantities of meat and meat alternates but do not include sufficient of the liver, heart, and kidney group. The use of the other food groups—milk, fruit, and vegetables—varied widely in the different centres. Price and availability seem to be the governing factors so far as the use of these three were concerned. This would point to the importance of a Government food policy designed to provide adequate production and distribution, at a reasonable cost to the consumer, of the foods necessary for health.

EDUCATIONAL PROGRAMME.

Following the surveys methods of improving deficiencies were discussed with public health staff, health teachers, representatives of men's and women's organizations, and the general public. In each case suggestions were given which would be of assistance to them in their own field.

Teachers were shown how they might make use of the survey results in presenting the nutrition part of the health course to their classes. The use of available printed leaflets and charts on nutrition was discussed. Kits of such material were sent to all schools in the Province in November.

Local Public Health staff were acquainted with material they could use in their clinics and on home-visits. They were also urged to bring the kits of nutrition material to the attention of teachers in outlying centres not visited by the nutritionist.

Whenever time and interest permitted, forum meetings were held with representatives of men's and women's organizations. These meetings were for the purpose of acquainting the representatives with the need for improvement of eating habits and discussing with them information and material available for members of their groups. Following the food forum, each representative was to discuss the material and information at a meeting of his or her own organization.

Meetings with the general public were in the form of a demonstration on how the foods recommended could be worked into three daily meals. Local organizations supplied the food and the products were sampled by the audience. Pertinent printed material was given to those attending.

This whole programme, including the survey and follow-up with the four groups mentioned, was carried out in eight centres and partial programmes in nine other centres. Local Nutrition Committees assisted with the complete programme in five centres. The eating habits of over 3,000 school children were checked, and the results discussed with 275 teachers representing twenty school districts. Between 90 and 100 organizations took part in food forum meetings and approximately 850 people were contacted through the public meetings.

SCHOOL LUNCH PROGRAMMES.

More and more attention is being paid to the institution of school lunch programmes as the most effective means of improving the nutrition of school children. Such programmes also serve as a practical demonstration to others of the value of properly balanced meals. Work done in co-operation with the Department of Education in 1943 in the compilation of a handbook and wall chart for teachers and leaflets for distribution to the home was followed up in 1944 by meetings with school inspectors, principals, and teachers to discuss problems in their respective areas. This led to the drawing-up of plans for cafeterias and the preparation of lists of necessary equipment for a number of schools.

Two problems hold up the rapid expansion of this programme. One is lack of sufficient funds to equip lunch-rooms and serve meals at a cost sufficiently low so that every one can take advantage of the programme and the other is lack of trained personnel to assist with the programmes locally.

To help with the latter, a programme to train Normal students in the organization and preparation of school lunches was started at the Victoria Normal School in 1944. It is hoped that this plan may be extended to the Vancouver Normal School, the Faculty of Education at the University of British Columbia, and the Summer School of Education.

With regard to financial assistance, the Provincial Department of Education has set aside funds for equipment in rural areas and Junior Red Cross funds can now be used for this purpose. Further assistance is necessary and would seem to await the adoption of a plan for Federal aid, such as is being recommended by both the Newfoundland and Canada Educational Association and the Canadian Council on Nutrition.

INSPECTION OF INSTITUTIONS.

The Provincial Secretary's Department is charged with the management of a number of institutions such as Industrial Schools and old people's homes. Many of these are too small to employ the services of a full-time dietitian. As the need is shown and as the opportunity arises, the feeding facilities in these institutions are inspected and recommendations made regarding any necessary changes. Although just one such institution, the Boys' Industrial School, was inspected in 1944, plans for 1945 include expansion of this service.

CO-OPERATION WITH OTHER GOVERNMENT DEPARTMENTS AND DIVISIONS.

At the request of the Child Welfare Division, the Nutrition Consultant has assisted with the compilation of low-cost food lists. These lists are to serve as a basis for review of foster-home maintenance rates. On completion of the study and after any necessary revision of the rates, it is expected that the field-workers of the Social Assistance Branch will be instructed as to the basis for the food lists. This will be a step forward in acquainting these workers and, through them, a section of the public, with the essentials of a well-balanced diet.

During the summer, at the request of the Supervisor of Illustration Stations, Dominion Department of Agriculture, the Nutrition Consultant attended field-days planned by this Department. Women in rural areas not reached through the broad educational programme discussed earlier were contacted at these field-days.

Work done in the schools through co-operation with the Department of Education was outlined earlier in this report.

WORK ON COMMITTEES.

Work on two committees should be mentioned. One is the Canadian Council on Nutrition, a body set up by Order in Council to advise the Nutrition Division of the Department of National Health and Welfare. The other is a committee of the British Columbia Government Employees' Association set up to manage the operation of a cafeteria in the Parliament Buildings for the use of Government employees.

Early in the year the Nutrition Consultant attended the meeting of the Canadian Council on Nutrition as official representative of the Provincial Health Services. This meeting is an annual one held in Ottawa. Highlights of the meeting were reports of the school-lunch committee mentioned earlier and a lengthy discussion regarding future policy with regard to the manufacture of Canada Approved Flour. The manufacture and promotion of a white flour of the approved type is important in the light of surveys of eating habits made in this Province as well as in other parts of the Dominion. Aside from

the information and contacts gained through this meeting, the trip enabled the Nutrition Consultant to observe at first hand work being done in the Federal Division in Ottawa and in other Provinces of the Dominion.

The British Columbia Government Employees' cafeteria in Victoria is worthy of mention from the standpoint that it is a Government sponsored institution managed by the employees for their own benefit. Staff cafeterias of this type are recommended by Nutritionists since they make available to workers well-balanced meals at reasonable cost.

In conclusion, the work covered by the Nutrition Services of the Provincial Board of Health during the year 1944 follows along the general lines reported in 1943. Few new local Nutrition Committees were formed in 1944 because of the difficulty found with the present personnel in maintaining contact with and giving guidance to those already formed. There was a tendency to do less work directly with the general public and more with groups such as public health personnel and health teachers who in turn are in contact with the public. This trend will continue as other agencies employ Nutritionists to carry out the field-work and as Public Health Educators become a part of Provincial and local health services.

Much remains to be done. In spite of an improvement during the war years, the eating habits of many Canadians are still below the standard necessary for optimum health. In our own Province, many communities and many institutions have yet to be visited by a Nutritionist for the first time. The problem of restaurant feeding has barely been touched.

The most encouraging aspect of the Nutrition programme is the growing recognition on the part of International, National, Provincial, and local bodies of the fundamental importance of proper nutrition for good health. Not only health departments are interested and not only health departments are concerned. To produce the food required, to get it to the people at a price they can afford to pay, and then to induce them to use proper selection in its eating, are problems of agriculture, transportation, commerce, and education. The fact that there has been an improvement in eating habits in recent years is a direct result of improved economic conditions and increased agricultural production coupled with the broad educational programme outlined in this report.

REPORT OF THE DIVISION OF VITAL STATISTICS.

J. D. B. SCOTT, B.A., B.COM., DIRECTOR.

INTRODUCTION.

Before outlining in detail the work of the Division of Vital Statistics during the year under review it is worth while to point out the main functions of the Division. The first is registration, collection, tabulation, and analysis of births, deaths, and marriages and other associated data like adoptions, divorces, changes of name, etc., occurring within the Province. The second is to provide statistical analyses and services for the Provincial Board of Health. It must co-operate with the other Divisions of the Provincial Board of Health in carrying out the public health programme laid down by the Provincial Health Officer.

The ensuing report endeavours to give an idea of what has been done during the year and also what remains to be done in the future. It will be noticed that many of the activities of the Division and the progress made has been summarized under the headings "The Division's Contribution to the War Effort" and "Summary of Registrations and Related Procedures." Under these headings subjects are dealt with such as the volume and extent of the verifications done by the Division, the services performed in connection with legal procedures relating to vital statistics, various lists of births, deaths, and marriages supplied, especially to the Federal authorities, the handling of the death records of overseas casualties and comments on the volume of registrations received. A summary of the problems in connection with the completeness of birth and other registrations has been made. Legislation, both new and proposed, governing the administration of the Division has been mentioned. Details of active co-operation between the Provincial Board of Health and the Division has been outlined. The fourth Dominion-Provincial Conference on Vital Statistics is reviewed.

In general, the report purports to show a somewhat greater degree of activity along most lines than in comparison with the previous years. However, the increases have not been so great as during some of the other war years and there is a very definite tendency towards a levelling off in the upward trend.

THE CONTRIBUTION OF THE DIVISION OF VITAL STATISTICS TO CANADA'S WAR EFFORT.

The Division's contribution to the war effort was again a significant part of its duties. Only the most important items of assistance in the war effort are outlined herein.

Documentation for Dependents' Allowance Board.—The Division assisted in the searching and certifying of 19,493 vital records pertaining to members of Canada's armed forces. This was an increase over the previous year, when 18,788 records were searched and certified. The total number of records so documented since the outbreak of war is 80,144.

Military Verification.—The number of verifications for recruiting purposes dropped from 4,786 in the year 1943 to 1,087 in the current year. Proof of age is a general recruiting requirement for the Air Force. Any army recruits around the age of 17 or 18 must also supply proof of age. The decrease may largely be attributed to reduced recruiting for the Air Force as well as to the elimination of a certain amount of duplication in military documentation to which attention was drawn in the previous year's report.

Fees waived for Military Purposes.—The Division continued to waive the statutory fees for delayed registration of birth, legitimation of birth, alteration of Christian name and correction of documents, etc., providing such services were for military purposes. A complete report was made on each of these cases to the Dependents' Allowance Board in Ottawa. Sometimes investigations were necessary which required considerable time and effort.

Co-operation with Wartime Federal Agencies.—There was no change in the amount or degree of co-operation given by the Division to the National Registration authorities, Selective Service, Wartime Prices and Trade Board,

and the Department of External Affairs, whereby proof or verification is regularly given to these bodies.

SUMMARY OF REGISTRATION AND RELATED PROCEDURES.

Volume of Registration.—The volume of birth registrations received was almost equal to the number received in the previous year. There were 18,846 registrations of which 1,123 were of Indians within the meaning of the “Indian Act.” The following is a table showing the increase in registration over a ten-year period, 1935 to 1944:—

Year.	Live Births.	Deaths.	Marriages.	Still-births.	Adoptions.	Divorces.*	Total.
1935.....	10,987	6,927	5,020	232	183	264†	23,618
1936.....	11,186	7,254	5,465	236	80	463	24,684
1937.....	13,033	7,981	6,232	254	109	536	28,145
1938.....	13,812	7,455	6,158	259	134	652	28,470
1939.....	13,176	7,626	7,897	279	150	608	29,736
1940.....	15,616	8,386	9,694	280	163	687	34,826
1941.....	17,025	8,617	9,828	308	191	563	36,532
1942.....	18,346	8,916	10,905	313	157	847	39,484
1943.....	20,068	9,918	9,476	338	249	886	40,935
1944.....	19,969	9,833	8,552	321	303	1,030	40,008

* Act in force May 1st, 1935.

† Includes nullities and judicial separations.

The all-time peak in marriages occurred in the year 1942 and it is not expected that the figure for that year will be exceeded until the war is over or in the event of this Province becoming a large base for military operations in the Pacific area.

The number of adoption orders sent by the Registrars of the Supreme Court to this Division reached an all-time high of 303 for the year. A notation of adoption is made on each original registration, showing the name of the child by adoption and the names of its adopted parents, the date of adoption and place of adoption. Any certificate which is subsequently issued from the document is issued under the name by adoption of the child and does not give any indication of its previous status.

The number of copies of decrees of dissolution and nullity of marriage filed with this Division by the Registrars of the Supreme Courts showed a very substantial increase. Altogether 1,030 decrees were registered during the year, of which 1,010 divorces, 14 were nullities, 3 legal separations, and 3 dismissals.

There was a slight increase in the number of persons who were granted a delayed registration of their birth in comparison with the year previous, when 985 such registrations were accepted compared to 973. Each one of these registrations requires careful investigation before acceptance. The establishment of definite national standards of minimum requirements for delayed registration of birth on a national basis should be of definite assistance to this Division in determining whether a registration should be accepted or not. These standards will become effective at the beginning of the year 1945.

Legitimation of Birth.—There were 105 births of children born out of wedlock legitimated subsequent to the marriage of their natural parents during

1944. In each case, after complete investigation by the Division, a new registration was filed showing the child as legitimate from birth.

A certain number of legitimations have occurred because of the careful documentation of the personnel of Canada's armed forces by the Dependents' Allowance Board. All details of marriages, births, etc., are carefully checked before granting payment to dependents, and hence cases where natural parents of a child previously registered as illegitimate have married, legitimation procedures have been instituted and the birth reregistered as legitimate. The annual check on children entering school for the first time also provides a means of intimating to natural parents, who subsequently married, of their ability to legitimate their offspring born prior to their marriage.

The Division has adopted the routine procedure of referring all cases of intended legitimation to the Superintendent of Child Welfare to be checked, unless both natural parents had acknowledged parentage by registering the birth promptly and by jointly signing the original document showing the child to be illegitimate.

Statutory Notations entered.—During the year 664 notations were entered upon registrations which had been previously filed. One hundred and one of such notations were alteration of Christian name of children under 12 years of age and the remainder were for correction of errors involving dates of birth, misspelling, incomplete answers, etc.

Change of Name.—Since the "Change of Name Act" was assented to on December 6th, 1940, there have been 692 changes of name granted by this Division. During the year 1944 there were 210 changes of name granted. All applicants have to be British subjects, 21 years or over, and must be domiciled in this Province.

Section 13 of the "Change of Name Act" specifies that notice had to be filed with the Division within three months after the Act was proclaimed of any changes of name of persons resident in the Province who have changed their name in the twenty years prior to the date of enactment of the Act. Since that date 2,048 notices have been filed. In many instances certificates have been issued which have proved useful to people in helping to provide an explanation of their change of name at some date prior to December 6th, 1940. The Division has continued to receive notices of change of name because there is no limitation placed by the Act upon it in receiving such notices, although the Act made it mandatory for persons who had changed their name to file notice within a three-month period. During the year 315 notices of change of name were accepted.

Death Registrations of Overseas Casualties.—As pointed out in last year's report this Division has received, through the co-operation of the Dominion Bureau of Statistics and the Department of National Defence, information on the regular death registration form of personnel of Canada's armed forces who were killed or died overseas during their period of enlistment. These registrations are collected for their statistical importance. No certificates are issued nor is there any documentation for legal purposes done from these records. The time-lag between the date of death and the time the Division receives the registration may be anywhere from six months to at least a year. There have

been 1,425 such registrations received up until December 31st, 1944, of which 752 were received during the year under review.

PRESERVATION OF RECORDS.

Microfilm.—The necessity to preserve the records of the Division and the solution to this problem through the process of microfilming has been outlined in detail in the report for the year 1942. Last year's report mentioned that the necessary equipment had been received toward the end of the year and that the work had been commenced forthwith. At the end of this year all the records of births registered from 1872 to 1943 have been photographed upon "micro-file" film. It is expected that by the end of the forthcoming year all the records of deaths and marriages from 1872 to date will be photographed. When this work is completed the members of the staff now typing certificates from the original records at the vault will return to the general office and certificates will be typed from the film itself. This will mean that the public will benefit as a certificate can be obtained immediately instead of after a delay of two or three hours. It is planned to eventually issue positive prints from the original negative film and thus do away with the typing of practically all certificates now issued from the central office.

TRANSFER OF ORIGINAL RECORDS.

For the period 1899 to 1913 all original registrations were left in the district offices and only copies were forwarded to the Division. For some years the process of transferring the original records to the central office and returning the copies to the district offices has been going on. A considerable effort was made during the year under review to complete this work, with the result that practically all the deaths and marriages outstanding were transferred by the end of the year. This work was necessary in order to permit the microfilming of the original documents. It also means that each original document is kept in a place of undeniable safety. Only a small number of records remain to be transferred. This work has resulted in the discovery of certain missing registrations which, although on file in the district offices, had never been received by the central office.

COMPLETENESS OF REGISTRATION.

Indians.—Further improvement is necessary in the promptness of registration of Indian births. While the measures outlined in last year's report have resulted in some progress it is felt that if the Indian Agents were paid the customary commission paid to District Registrars that this should be a further stimulus. If commissions are paid in the future, the doctors, Indian nurses, priests and missionaries, and others who have been responsible in securing the registrations for the Indian Agent should in turn be paid their share by the Indian Agent. This matter will be taken up with the officials of the Indian Affairs Branch and if it proves practicable it is expected that it will be put into operation during the forthcoming year.

Doukhobors.—When the report of the previous year was written there had been disturbances amongst the Doukhobors regarding registration with the

National Selective Service. In turn this affected the registration of vital statistics adversely. This, however, was a temporary situation and within a short time the registration of births, deaths, and marriages of these people was proceeding at its normal rate. A rough estimate given by an official dealing with Doukhobors indicates that about 80 per cent. of all Doukhobor births are registered at the present time, virtually all deaths, and only about 1 per cent. of the marriages. It is expected that there may be some improvement in birth registration on account of the regulations that no Family Allowance will be paid for a child unless its birth is registered beforehand. Until Doukhobors are married in legal ceremony it is not expected that there will be any improvement in marriage registration.

Registration of Births.—Because of rationing, payment of Dependents' Allowance, and a greater awareness of the parents' responsibilities in the matter, there has been virtually 100 per cent. registration of all births. Even although rationing were to cease at any time, the fact that a birth must be registered before a Family Allowance will be granted will mean that births will be promptly registered in the future. Thus, in years to come, there will be no problem of delayed registration such as the Division now experiences.

The co-operation of the physicians in sending in notifications of a live birth or still-birth has continued to be excellent, in spite of the very heavy demand on their time. Hospitals, both public and private, have continued to send in most regularly and without exception their monthly returns of births. The final method of checking on birth registration—namely, a return from all schools (public, private, and elementary correspondence schools) in the Province of pupils entering school for the first time—brought in a fewer number of unregistered births than in previous years. It is possible that within a year or two this check on completeness of birth registration may be eliminated.

Registration of Deaths.—The quarterly return of burials and cremations from all superintendents of cemeteries in Victoria, in accordance with the provisions of section 17 of the "Vital Statistics Act," will be instituted for the first time during the forthcoming year. Meanwhile the registration of deaths has not presented any fundamentally different problems in 1944 from that experienced in previous years.

Registration of Marriages.—Whenever a fresh marriage register is requested by a clergyman the Division requires that the completed register be returned for checking. However, there are many marriage registers wherein only a few marriages are entered each year. Hence in the normal course of events these might be only checked once in ten years. Rather than delay so long in order to determine whether or not all marriages have been registered, the Division has called in during the year registers in the hands of Roman Catholic priests, Mennonites, and some in the hands of United Church clergymen. Registers in the hands of clergymen of other denominations will be called in by the Division in rotation in the future. It has not been possible to locate all the marriage registers issued many years ago. Efforts will be continued to locate these records, as undoubtedly they will contain more unregistered marriages than those issued in later years. As a result of the check on marriage registers, 103 delayed registrations of marriages were effected during the year under review.

The Division has continued to check all marriage registers located with military units whenever a chaplain having custody of a marriage register changes. Once the service-man or the chaplain has left the Province, either for service overseas or elsewhere, it becomes increasingly difficult to correct any errors or omissions on a registration of marriage.

DISTRICT REGISTRARS' OFFICES, ETC.

In March, 1944, the registration districts of Ladner and New Westminster were consolidated. For some years all the work of the Ladner registration district has been done by the District Registrar at New Westminster and it was felt that in order to eliminate unnecessary indexing for both registration districts that the consolidation would be warranted.

At the close of the year the Division of Vital Statistics had eighty-five district offices and fourteen sub-offices. There are 120 Marriage Commissioners and thirty-five Issuers of Marriage Licences appointed under the "Marriage Act." Some twenty-nine district offices were inspected during the year and four out of the nineteen Indian Agencies of the Province were also inspected. Some of these district offices had never been visited before and others very infrequently. The inspections proved most worth while from the standpoint both of checking on the records kept in the district offices and instructing the District Registrars and their Deputies on points in connection with their work. The Division is keenly appreciative of the co-operative attitude shown by the District Registrars and their Deputies.

ADMINISTRATION OF THE "MARRIAGE ACT."

Last year's report set forth in considerable detail some of the highlights in connection with the administration of this Act. It is only necessary this year to mention the problem confronting the Division in the administration of this Act in connection with the qualifications of a religious denomination making application for the first time for authority for its ministers or clergymen to perform marriages within the Province. The governing authority of the denomination must submit evidence in conformity with section 4 of the "Marriage Act." Decision must be made by the Registrar (Director of Vital Statistics) as to whether the religious body is sufficiently well established both as to continuity of existence and as to recognized rites and usages respecting solemnization of marriage to warrant, in his opinion, the registration of its ministers and clergymen as authorized to solemnize marriage. A new letter of instructions was drafted during the year wherein the requirements of the Division are more completely set forth. In addition, before any new denomination can be registered a petition must be signed by at least fifty heads of households who are members of the religious denomination seeking registration.

During the year seven denominations applied for registration under the "Marriage Act." Two, Beth Hamidrosh, a Jewish congregation, and the Old Colony Mennonite Church were recognized. None was refused. At the end of the year there were seven applications pending, two carried over from the year previous. It is not the policy of the Division to recognize any denomination of a "mushroom growth" type of organization as this does not appear to be the intent of the "Marriage Act."

LEGISLATION.

The "Marriage Act."—This Act was amended to permit the marriage of a married person whose husband or wife had been missing for more than seven years and whose death had been presumed by a Judge of the Supreme Court. The amendment has no other legal effect than to permit the solemnization of a form of marriage, it does not in any way interfere with the validity of a prior marriage if the person presumed to be dead should reappear. The Court Order of Presumption of Death must be filed with the Division of Vital Statistics.

The "Vital Statistics Act."—No amendments were made in 1944; however, the Act should be amended in the next year for the following reasons:—

At the present time there is no specific authority in the Act whereby the Provincial Secretary may enter into an agreement with the Dominion Government regarding verification for such purposes as Family Allowances, Contributory Old-age Pension, Health Insurance, and for other miscellaneous matters where proof of birth is required by various Dominion authorities. Authorization of such authority on the part of the Provincial Secretary would make for flexibility in the Division's relations with the Federal Government Departments.

If a well-balanced public health programme is to be carried on within a health unit or a public health nursing district it is necessary to have information regarding the birth of infants and also to know the causes of death of the people under their care. At the present time the "Vital Statistics Act" does not make any provision for such data to be made available to public health personnel. It is proposed to ask for legislation permitting the Provincial Health Officer to authorize the Director of Vital Statistics to give information to Health Unit Directors and to Public Health Nurses where necessary for the carrying-out of a proper public health programme.

With the advent of Family Allowances in July, 1945, and the possible beginning of other social measures in the near future requiring proof of birth, and also on account of the necessity for more prompt statistical reports, provision should be made whereby the returns of births, deaths, and marriages, etc., which are now received monthly by the Division may, by regulation, be made on a semi-monthly or weekly basis by the District Registrar to the central office.

The "Vital Statistics Act" would appear to give more discriminatory powers to a District Registrar in accepting a registration of a current birth than is given to the Registrar in accepting evidence of a delayed registration of birth. It is proposed to give the Registrar the equivalent powers of a District Registrar in this matter.

At the present time it is mandatory for each school teacher in the Province to make a return of the birth of all children entering school for the first time. In the advent of what should prove to be 100 per cent. registration under Family Allowances it would appear that such a provision should no longer be effective and it is proposed that the provisions of the Act regarding this matter may be discontinued subject to regulation by the Lieutenant-Governor in Council.

At the present time District Registrars, in order not to cause any inconvenience to both the public and undertakers, have issued burial permits occur-

ring outside their registration district. This is contrary to the provisions of the Act. However, it is desirable that permission for this unauthorized practice should be given by Statute.

While the number of divorces has been increasing very greatly in British Columbia the number has also been increasing in most of the other Provinces of the Dominion. At the present time no adequate divorce statistics are being collected on a National basis and it is proposed that legislation be initiated by means of an amendment to the "Vital Statistics Act" whereby the Registrars of the Supreme Courts would transmit a statistical return of each divorce to the Division who, in turn, would send a copy to the Dominion Bureau of Statistics for purposes of National tabulation.

The "Change of Name Act."—No amendments were made during the year under review. However, two points in connection with the Act are under review and may warrant an amendment at some future date. The first is the fact that a divorced woman is unable to resume her surname prior to her marriage. Before the Act came into force on December 6th, 1940, it was a fairly common practice of the Judges when pronouncing a decree of divorce to state that the divorcee would take back her maiden surname or whatever surname she was known under before her marriage.

The second point deals with the inability of a widowed or divorced woman to change the surname of her children, even although she is their sole legal guardian. Very often it happens that a widowed or divorced woman remarries and she endeavours to have the children's surname changed to her newly married surname. The only way this can be done is to have the children adopted by her husband and herself.

There is no provision in the Act whereby the mother of an illegitimate child may change that child's surname in the event of her changing her own surname. It is questionable whether such a change should be permitted. Much careful consideration will have to be given by the Division before it would advocate this type of change.

CO-OPERATION WITHIN THE PROVINCIAL BOARD OF HEALTH AND ITS DIVISIONS.

The policy of having the Division act as an adviser on forms, codes, and statistical procedures and format of reports has been carried out in accordance with the general plan of co-ordinated effort outlined by the Provincial Health Officer. The Division continued to render very tangible assistance to the Divisions of Tuberculosis Control and Venereal Disease Control respectively in the preparation, tabulation, compilation, and presentation of their monthly and annual reports. Acting in his capacity as Supervisor of Medical Records to the Provincial Board of Health, the Director of Vital Statistics checks all statistical and medical forms for duplication of data and uniformity in questions, etc.

On account of changes made in the previous year in the record system of the Division of Tuberculosis Control, wherein that Division assumes a greater responsibility for the compilation of its own statistics on a cumulative daily basis, it became less necessary for the Division of Vital Statistics to supply the services of a full-time statistical clerk. Furthermore, on account of the many

changes in personnel and organization within the Division of Venereal Disease Control, and the necessity to stream-line their record system, it was considered advisable to close out the Vancouver Section and transfer the statistical clerk in charge, Miss Jean Gilley, to the Division of Venereal Disease Control.

The Division of Vital Statistics continued to give assistance to the Bureau of Local Health Services of the Provincial Board of Health by supplying statistical information regarding population estimates, budget estimates, etc., for both established and proposed Health Units. Statistics from the reports of the Medical Inspection of Schools were compiled by the Division. Similarly, the Division continues to assume responsibility for the collection of statistics on the work of the Public Health Nurses as recorded in their daily reports. Statistics on cancer notifications were punched and certain tabulations made.

The Division of Vital Statistics continued to carry on the editing and publishing of the Provincial Board of Health Monthly Bulletin. Several articles were contributed by members of the staff of the Division.

Problems relating to health insurance were referred both from the Interdepartmental Committee on Health Insurance and by the Provincial Health Officer to the Division for statistical information. Statistical data were collected which were used by the representatives of the Province attending the conference of Ministers and Deputy Ministers of Health at Ottawa in May. Since that date certain other compilations on the same subject have been prepared by the Division under the direction of the Provincial Health Officer. The Division is keenly interested in health insurance both from the standpoint of its importance in influencing the development of public health and also because it will be the only source of adequate morbidity statistics—which are now so much needed.

It should be emphasized that only the most important work done by the Division for the Provincial Board of Health has been mentioned above. It is the aim of the Division of Vital Statistics to be the workshop of public health for the Provincial Board of Health and therefore many small tasks of minor importance are also performed by the Division.

MECHANICAL TABULATION PROBLEMS.

At the present time all the alphabetic punching and much of the counting-sorter work done in connection with the alphabetic and statistical punch-cards of the Provincial Board of Health is performed within the Division of Vital Statistics. The listing and tabulating of these cards is done at the Bureau of Economics and Statistics. Schedules on routine work have been fairly well maintained by the Bureau; however, experience has shown that there has often been considerable lag in obtaining tabulations from other than routine applications. It is felt that the time has now come when there is sufficient work on hand within the Division to warrant a small though complete installation of mechanical equipment.

Certain advantages will accrue to the Division by having its own equipment. Foremost among these will be the fact that the personnel working with the records will have an intimate knowledge of the particular application gained from their specialized experience with records of the Provincial Board of Health. Coupled with this will be a greater sense of responsibility for the

work, the operators being members of the staff of the Division. Secondly, there will be greater flexibility. Tabulations in progress can be checked at the various stages and, if necessary, runs rearranged in order to take full advantage of the information as it appears. This lack of flexibility is also accentuated by the fact that this Division is some distance away from the Bureau of Economics and Statistics and it is not always feasible to have a statistician on hand at the time of tabulation. To have a compact installation will mean a saving in costs both of transportation of cards and in time spent by the staff in coming back and forth between the Bureau and the Parliament Buildings.

FOURTH DOMINION-PROVINCIAL CONFERENCE ON VITAL STATISTICS.

Following a recommendation made at the conference of the preceding year the Fourth Dominion-Provincial Conference on Vital Statistics was called in Ottawa on September 26th. The following were the most important topics dealt with at the Conference:—

Delayed Registration Standards.—This subject was one of the most contentious at the previous year's conference. A committee was formed of representatives from Alberta, Manitoba, Nova Scotia, and British Columbia to work on the problems. The result was the adoption by all Provinces of "Standard Minimum Evidence Acceptable for Delayed Registration of Birth" set forth below:—

STANDARD MINIMUM EVIDENCE ACCEPTABLE FOR DELAYED REGISTRATION OF BIRTH.

(As adopted by all Canadian Provinces.)

CLASS " A " EVIDENCE.

(One item sufficient if document discloses parentage, date, and place of birth.)

- A copy of the hospital record of the birth, certified by a competent official of the hospital.
- A copy of the record of the physician who was in attendance at the birth, certified by himself, or in the event of his absence or death a copy certified by the person who has the custody of his records.
- A baptismal, cradle roll, or other church record copied from the original entry, if such record was made before 4 years of age.
- Production of a newspaper giving the date of publication, or a certified extract from same, containing the announcement of the birth, if such announcement establishes the date, place, and parentage.
- Insurance policy if taken out before 4 years of age.
- A certified copy of the record of the nurse or midwife who was in attendance at the birth.

CLASS " B " EVIDENCE.

(More than one item necessary.)

Class " B " evidence consists of documents which are made after the fourth birthday, or if made before the fourth birthday do not contain conclusive evidence as to the date, parentage, or place of birth. Affidavits from memory alone are not acceptable unless supported by at least one item of Class " B " value. Examples of Class " B " evidence are:—

- Dated letter or telegrams received shortly after birth.
- Birthday or baby books.
- Record of entering school for the first time, if record shows date of birth.

Vaccination or other health record if made when an infant, and which discloses dates of birth and vaccination.

Census, immigration, or consular records.

Records from Child Welfare Departments if made within 4 years of birth.

Affidavits from two disinterested persons who saw the child shortly after birth, provided that one of them gave birth to a child of her own within a few months (either before or after) of the date of birth of the applicant's child, thereby establishing a reason why this date and place of birth is fixed in her memory. It is essential, of course, that a registration of her child's birth be found in the departmental records before such affidavit is accepted. Any other recorded event such as a marriage or death would have equal value.

Divorce Statistics.—The conference of the previous year agreed in principle upon the desirability of developing a system of national divorce statistics and requested the Dominion Bureau of Statistics to canvass the field with the Provincial and Federal authorities concerned and prepare a draft form for consideration at the next conference. This was done at this year's conference and after some discussion it was decided that the matter should be given further detailed study in consultation with local representatives. In view of the increasing number of divorces in this Province it is felt that this Division should have the necessary legislative authority to collect the required information from the Registrars of the Supreme Courts and transmit it to Ottawa on a nationally approved form.

General Remarks.—The conference discussed reports submitted by the Vital Statistics Section of the Canadian Public Health Association. The proposed Canadian Still-birth Code, the revision of the Handbook on Death Registration and Certification, Current Vital Statistics Data, and the Form and Content of the Annual Vital Statistics Report were among the subjects dealt with. These items were carried over for further discussion and report.

The conference itself was considerably shorter than the Third Conference because of two factors. The first was an all-day joint session with representatives of the Province of Ontario to discuss a proposed revision in draft form of the Ontario "Vital Statistics Act." The discussions were mutually beneficial to all Provinces. The second factor was the joint session between the Deputy Ministers of Health, the Directors of Vital Statistics, and officials of both the Dominion Bureau of Statistics and the Federal Treasury. The session dealt with the services now given by the respective divisions of vital statistics to the various Federal Government agencies with particular reference to the application of vital statistics to Family Allowances—proof of birth being required for every child.

Several alternative plans were discussed. At the same time it was known that Contributory Old-age Pensions and Health Insurance are potential sources of demand for further verification procedures. The third plan was adopted in principle by all Provinces. Briefly, Plan III. called for the creation of a National Register of Vital Statistics Records by means of microfilming the vital statistics records of each Province monthly and sending a photographic copy of each registration to the Dominion Bureau of Statistics in place of the regular transcript. These photographic copies would be the source from which the Federal Government would obtain its verifications. The basic equipment would be supplied by the Dominion. In addition, a Vital Statistics Council made up of one representative from each Province and one respectively from the Yukon

and Northwest Territories, and the Chief of Vital Statistics of the Dominion Bureau of Statistics is to be established forthwith. This Council will discuss and advise on problems arising out of the administration of the vital records system and relative statistics. A proposed agreement has been drafted by the Dominion Bureau of Statistics and approved by the Federal Minister of Trade and Commerce and National Health and Welfare. The Division is of the opinion that the Province should retain the final word as to what verifications should be done by the Dominion Bureau of Statistics for the various Federal departments from the records of the Province. The proposed agreement, in effect, would hand over to the Federal authority for whatever purpose it deemed necessary the records of the Province without further control. An alternative proposal has been made by the Division that specific approval should be given for each type of verification granted to the Federal Government. At the close of the year the subject was still a matter of negotiation.

PROBLEMS OUTSTANDING AT THE END OF THE YEAR.

Goal in Registration.—The statement made in last year's report "the first and perhaps most fundamental problem of the Division remains the necessity for full and complete registration of births, deaths, and marriages" must be again reiterated. The fact that Family Allowances will be granted conditional to registration of a birth should immeasurably help in the achievement of almost perfect registration of births. The process of following up marriage registers, long overdue for checking, has to be quickened during the coming year and a regular checking schedule maintained thereafter. Section 17 of the "Vital Statistics Act" must be implemented during the forthcoming year in order that a full check should be regularly made of all burials or cremations, etc.

Standards for Correction of Documents, Legitimation Procedures, etc.—A beginning must be made towards the establishment on a national basis of acceptance by the respective Provinces of correction of documents, legitimation procedures, alteration of Christian names, and other items relating to documentary revision.

Reorganization of Central Office of the Division.—Since the war has commenced the duties of the various members of the staff have changed, in many instances considerably, from the work which was done by the occupant of the same position formerly. It is becoming more and more necessary that a reorganization of the staff of the employees in the central office should be carried through during the ensuing year. The volume of registrations has grown so that the work will have to be split up with the responsibility being more equally shared by the key members of the staff. Before this reorganization can be effectively completed it will be necessary to draft functional, administrative, and personnel charts of the Division to provide a proper means of analysis.

District Registrars' Manual.—Another important piece of work that must be completed within a short time is the revision of the manual for District Registrars of Births, Deaths, and Marriages and also one for Marriage Commissioners and Issuers of Marriage Licences. This work has barely commenced—manuals have been received from various states and notes have been gathered on results of inspection trips. It is planned to bring the manual out in loose-

leaf form so that revisions may be made from time to time without the inconvenience of reprinting all the instructions.

Development of further Services to the Provincial Board of Health.—Before sound programmes can be initiated by the Bureau of Local Health Services respecting the growth of public health measures in local communities it is necessary to obtain all pertinent data relating to each community. It is the function of the Division of Vital Statistics to supply as much of the needed information as required. Information relating to estimates of population, birth, and mortality statistics of all kinds are usually requested from the Division. However, much more tangible service must be rendered in the future than is now given by the Division. For instance, a course of training for Health Unit Clerks should be outlined and instituted. Census data which is now compiled on the basis of the Dominion Statistical Publication Areas and the subdivisions thereof will have to be interpreted in terms of the much smaller local settlements. A sound basis for census data would appear to be the individual census enumeration areas, provided the Division can be instrumental in having them redistributed according to the Dominion Statistical Publication Areas and the subdivisions thereof instead of according to electoral districts which are subject to change from time to time. Such census enumeration data would allow the Division to accurately compile the statistics of potential health units. Efforts must be made by the Division to show the desirability of having the enumeration areas redefined to lie within the Dominion Statistical Publication Areas. Once this is done it would be possible for the vital statistics of the Province to be also compiled on the same basis. Morbidity and other statistics might also be compiled similarly. However, it is first necessary to convince the Dominion Bureau of Statistics of the necessity of having this work done. An effort is being made in this direction at the close of the year.

General Remarks.—Other problems will present themselves to the Division in the forthcoming year. The experience of the past has been that the staff of the Division has a spirit of co-operation and interest in their work that will ensure a sustained effort toward solution of the many and varied problems before them.

REPORT OF THE DIVISION OF LABORATORIES.

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INTRODUCTORY COMMENTS.

For the past several years it has seemed that the Division of Laboratories had reached the limits of its capacity to cope with increasing demands. But each year, by enlarging either the staff or the accommodations, or both, means were found of enabling the Division to handle a greater number of specimens and to undertake new responsibilities. Since the fourth house on Hornby Street was taken over by the Government in February, 1943, no additional accommodation has been available in, or adjacent to, the "temporary" premises occupied by the Division for the past fourteen years. The only means of increasing resources during 1944 was therefore by staff expansion. Several resignations, some involving fairly senior members of the staff, complicated the task of training the fourteen newcomers who joined the Division for replacement

or reinforcement. There were times, especially during the summer vacation season, when it was tempting to follow the short-sighted but simpler policy of distributing the increasing pressure from the stream of incoming specimens among the remaining fully-trained technical staff, rather than have them divert part of their attention to the task of supervising novices. However, the sounder policy was followed of recruiting a larger technical staff, as far as appropriations and available personnel permitted; and of quickly broadening their training by circulating them among the different sections of the Division whenever circumstances made this feasible. Despite all the difficulties encountered, 201,767 examinations were made during 1944 at the central laboratories in Vancouver, a figure nearly 8 per cent. greater than for 1943.

The branch laboratories also faced serious difficulties, chiefly due to staff changes and shortages. These problems were cheerfully met, despite an increased load at Kamloops, Kelowna, Nanaimo, and Nelson—in fact, in all the branch laboratories save those at Victoria and Prince Rupert, where certain special conditions which had disproportionately inflated their turnover last year were alleviated.

TESTS RELATING TO VENEREAL DISEASE CONTROL.

As in previous years, tests relating to syphilis and gonorrhœa accounted for roughly two-thirds of all examinations made by the Division. Blood tests for syphilis, totalling 114,690, remained at substantially the same level as in 1943, although there were larger numbers of the more time-consuming standard Kahn and Kolmer-Wasserman complement-fixation tests. Since these two tests are only performed on specimens giving a doubtful or positive presumptive Kahn reaction, a higher ratio of the former to the latter might be deemed a possible indication of a rising incidence of syphilis in the community. However, further analysis of our figures would be required to substantiate this interpretation; and a more probable explanation would seem to lie in the elimination of tests upon the Red Cross blood donors, among whom the incidence of doubtful and positive reactions had locally proved remarkably low.

In view of the 1943 total having included over 17,000 blood donor specimens, it is obvious that the current trend in serodiagnostic testing in this Province remains upward. Had these blood donor specimens not been eliminated from routine testing, the serodiagnostic department would have been saddled with an altogether unmanageable burden. The situation would have been far worse had the Division attempted to undertake routine premarital tests. It is definitely not yet feasible, in the face of the rising general demand for blood tests, and of the present inadequate laboratory accommodation, to contemplate enforcement of premarital tests. These general and particular demands for more serodiagnostic tests have resulted from public health education, applied persistently to all groups in the community, including physicians; and may be regarded as one of the most important and hopeful consequences of campaigns against syphilis. But gratifying though this response may be to those in charge of such campaigns, it is only fair to emphasize that the laboratories bear (almost entirely unadvertised) the brunt of the work entailed. Only those with laboratory experience, or with unusually sympathetic imagination, can visualize the problems entailed, for example, in a doubling of the

number of blood specimens tested annually since 1940, despite an ever-changing staff and the same unsatisfactory accommodations. In 1935, when the present Director was appointed, the total tests of all kinds performed in the central laboratories was less than one-half the number of blood tests for syphilis now carried out there. The Division as a whole examined about 120,000 different blood specimens for syphilis, which is roughly equivalent to one such test for every eight persons in the population at large. It may be confidently claimed that no State or Provincial laboratory in North America can point to a higher rate of testing.

Assurance was received during the year that the quality of performance was as notable as the quantity. The central laboratories participated in a survey of the accuracy of performance of serodiagnostic tests for syphilis, initiated by the Laboratory of Hygiene of the Department of National Health and Welfare. All Provincial laboratories throughout Canada were sent some 200 blood samples, from syphilitic and non-syphilitic sources, carried out on each of them the presumptive Kahn, standard Kahn, and Kolmer-Wasserman tests, and sent in their reports made out in the customary manner. No special refinements of technique were applied to these samples, nor were experienced technicians assigned to these tests. Yet in respect of both *specificity* and *sensitivity*, the central laboratories ranked first or second among those participating. The fine showing achieved in a similar survey conducted two years ago has thus been maintained or even surpassed.

Apart from private physicians, the Division of Venereal Disease Control, and medical health officers, the armed forces continued an important supplementary source of blood samples for these tests. By far the greater number of specimens were sent in by Army authorities. Specimens from recruits, from hospitalized patients, and from personnel about to be discharged totalled nearly 14,600, for which the Division received payment of 15 cents per specimen. Considerable numbers of R.C.A.F. specimens were also examined, although not according to any systematic plan, the majority of Air Force personnel having been apparently tested in the earlier years of the war. At the year's end negotiations were proceeding in regard to routine blood testing of R.C.A.F. personnel prior to discharge, the Division tentatively offering to examine up to 200 specimens weekly in consideration of a payment of 15 cents per specimen. Incidentally, this sum is somewhat less than the actual cost entailed. Relatively few samples have been received from the Navy by the central laboratories, specimens from this Service being sent mainly to the Victoria branch laboratory, owing to its proximity to Esquimalt.

Public attention has frequently been drawn to the incidence of syphilis being lower in the Pacific Command than in the armed forces elsewhere in Canada. It may be opportune to point out here that blood tests performed by this Division have provided the main basis for such pronouncements. A comparatively low incidence of syphilis among the civil population of British Columbia no doubt largely accounts for this favourable experience in the Pacific Command. The Division continued its policy of carrying out such serodiagnostic surveys of civilian groups as time and opportunity permitted. In one such survey conducted during the summer at the request of an important commercial air line company, only four positive and three doubtful results were

obtained among a total of 1,163 specimens tested. This gives a maximum possible incidence of syphilis of 0.6 per cent., and a probable incidence of 0.34 per cent. for the group. These figures conform with those given in last year's Annual Report, where reference was made to the maximum incidence of serologically-detectable syphilis among some 20,000 prospective Red Cross blood donors being below 0.3 per cent. Throughout 1944, as in the previous two years, shipyard workers were routinely tested as soon after enrolment as possible. Among this group, comprising men and women of a wide range of age and social strata, but with male labourers predominating, the incidence of syphilis again proved surprisingly low. Of 6,574 persons tested during the twelve-month period, eliminating repeat tests, 150 gave positive or doubtful reactions, a maximum possible incidence of 2.28 per cent. Another survey, carried out in the last few months of the year in co-operation with the Division of Venereal Disease Control, yielded even more gratifying information. Among 520 employees of a fish-cannery, representing largely casual labour, and including a high percentage of Indians, only eight had positive or doubtful blood reactions, a maximum incidence of about 1.5 per cent. In this group were 120 Indians, of whom four, or 3.3 per cent., gave positive or doubtful reactions. These figures are not given in an endeavour to minimize the seriousness of the syphilis situation; but rather to help place in proper perspective some of the more extravagant claims and implications respecting the local incidence of this disease.

Continuing the trend of the past several years, there was a significant increase in the numbers of cerebrospinal fluids examined by Kahn and complement-fixation tests, and for colloidal reaction. This indicates a growing recognition by physicians of the importance of requesting at least one such examination on all cases of syphilis under their care, in order that the onset of neurosyphilis may be detected as early as possible.

An even more important trend continued during the year was that manifested by dark-field examinations for *Treponema pallidum*, which increased from 242 to 393, or by over 62 per cent. This is encouraging evidence of success in the campaign to promote diagnosis of syphilis in its earliest stages. In an effort to further this campaign, the Division distributed to every hospital in the Province a supply of outfits for collecting specimens for dark-field examinations, with instructions to send in such specimens by air mail whenever possible. All positive reports were telegraphed. Although, with only one or two exceptions, the branch laboratories have the equipment for carrying out these intricate tests, it has seemed preferable to divert the great majority of such specimens from the interior of the Province to the central laboratories in Vancouver.

The rather favourable impression conveyed by the foregoing figures relating to syphilis cannot be gathered from the figures applicable to gonorrhœa. The year was marked by an increase from 19,852 to 28,739—i.e., of 44.8 per cent.—in direct microscopic examinations for gonococci. Bearing in mind that such examinations, unlike blood tests for syphilis, are rarely requisitioned unless there be definite clinical signs of gonorrhœa, or a history of past infection, it is apparent that such a notable increase in these examinations must be taken as an index of greater numbers of suspected gonococcal infections. The increase

in specimens for gonococcus culture reaching this Division from the Division of Venereal Disease Control was even more notable. A total of 8,545 gonococcus cultures were performed in 1944, as compared with 5,713 in 1943, an increase of 49.6 per cent.

The comments made in last year's report upon these two types of examination for gonococci; namely, that they involved the laboratories in disproportionately heavy administrative and interpretive problems, may be applied with even greater emphasis to the year under review. For instance, the smear examinations can only be reliably carried out by experienced technicians, and are yet exceptionally tedious and eye-straining. The numerous changes in the technical staff during the year rendered difficult the training of newcomers for this work. Senior members, although fully occupied with their own special responsibilities, handled a share of these specimens whenever possible; while Miss Kerr, despite her many duties as Assistant-Director, assumed personal charge of these specimens for several months. The newer methods of treatment for gonorrhœa have resulted in the criteria formerly accepted as characteristic of a gonococcal smear being no longer adequate. Only by very close correlation of the clinical and epidemiological aspects of this infection with certain laboratory findings can the true significance of the latter be determined. This statement applies equally to the gonococcus culture method. It is urgently desirable that research be prosecuted for more satisfactory means of identifying gonococcus colonies. Present shortages of technical personnel, mounting pressure of "routine" activities, and inadequacy of the Division's existing facilities have regrettably prevented work along these lines.

TESTS RELATING TO TUBERCULOSIS CONTROL.

As in previous years, all types of tests for tubercle bacilli underwent an increase. Direct microscopic examinations increased from 6,295 in 1943 to 6,901, or by 9.6 per cent.; while the far more time-consuming cultures for *M. tuberculosis* increased from 561 to 763, or by 36 per cent. Much of the marked increase in cultures was due to requisitions from the Shaughnessy Military Hospital and from the Coqualeetza Indian Hospital—both operating under Dominion Government auspices—for which work the Division received no financial or other compensation. The sending-in of stomach-washings from infants or sputumless cases is rapidly increasing, and in view of the troublesome preliminary treatment of the specimens required prior to culture or animal inoculation, is bound to involve the laboratories in future difficulties.

Animal inoculations (the great majority of which were for *M. tuberculosis*) showed an increase of 8.5 per cent., despite the Division's inability to carry out these tests for a period of several weeks during the summer, owing to unavailability of guinea-pigs. Reference has been repeatedly made to the uncertainty surrounding our supplies of guinea-pigs. Sources hitherto reliable have either ceased to breed laboratory animals since the war or had only infected stock to offer. In recent years the pseudo-tuberculosis infection prevalent among rats in and around Vancouver became apparent in the guinea-pig colonies of local breeders. Last year another type of infection, due to *Salmonella typhi murium*, was identified as the cause of fatalities among our guinea-pigs. This micro-organism is also a common cause of infection among wild rodents, and may

have been transferred to our animals by infected rats or mice. It is certain that rats and mice have access to the laboratories, and it would not be feasible to render the buildings proof against them. An important feature of the more satisfactory accommodation which must soon be made available for the Division will be properly-designed quarters for laboratory animals, so that a healthy supply may be assured. Meanwhile, the supply situation showed considerable improvement towards the end of the year through the purchase of several small colonies from private sources. Arrangements have also been made with the Provincial Mental Home at Colquitz whereby guinea-pigs for use of this Division will be bred there; and it is hoped that there will thus be no necessity during 1945 to postpone performance of animal inoculation tests for the presence of tubercle bacilli.

TESTS RELATING TO CONTROL OF INTESTINAL INFECTIONS.

The year was marked by numerous sporadic small outbreaks and isolated cases of intestinal infections, due to organisms of the typhoid-paratyphoid-Salmonella-dysentery group. There were no large-scale epidemics, although early in the year specimens were still reaching the Division from secondary cases or contacts arising out of the Vernon epidemic of 1943. Most of this year's cases were due to unsuspected carriers, chiefly in the Vancouver area, and the central laboratories played a crucial part in the identification of many of these carriers, as well as supplying the private physician and the medical health officer with the correct diagnosis in many instances of puzzling or trivial clinical symptomatology.

Of special interest and concern was the finding of numerous cases of *Salmonella typhi murium* infection, mainly in or around Vancouver. As mentioned above, this organism is a frequent cause of epidemics among small rodents, which may, by pollution of human food with their excreta, convey a paratyphoid-like infection to man. No evidence could be found by the laboratories that this was, in fact, the mode of origin of the Vancouver cases of *S. typhimurium* infection. Nor did success attend a few attempts made to incriminate as vectors flies caught in the vicinity of houses where these infections occurred. Although the probable mode of conveyance in these cases was through direct contamination with infected human excreta, it should be borne in mind that many members of the *Salmonella* group of organisms are liable to infect a wide variety of wild and domestic animals, as well as man, and that this situation both multiplies the potential modes of conveyance and complicates their control.

Positive stool cultures for Salmonella organisms were detected in the central laboratories from sixty-six different individuals during 1944. *S. typhi* (the cause of typhoid fever) was isolated from thirty-four of these persons, of whom nineteen were domiciled in Vancouver. There were thirty-two persons from whom *S. typhi murium*, *S. paratyphi B*, or *S. newport* were isolated, twenty-five of these being residents of Vancouver; and the first-named of these three organisms accounted for two-thirds of the cases.

An identical number (sixty-six) of positive stool cultures for Shigella organisms (dysentery bacilli) were detected during the year. There were forty-three persons from whom the Flexner dysentery bacillus was isolated,

twenty-three being Vancouver residents; while of twenty-three persons yielding the Sonne bacillus, thirteen were Vancouver residents. In all, the record number of 132 cases or carriers of typhoid-paratyphoid-Salmonella-dysentery infections were identified by the central laboratories during 1944.

Such factors as war-time interchanges of population, general overcrowding, and laxity in food preparation and handling have no doubt contributed to this high incidence of excreta-borne infections. Such an increase had been foretold by the Director in various addresses and scientific papers. It can be asserted with equal confidence that unless improvements are accelerated in the general sanitation level of numerous communities throughout the Province, the sporadic carrier-borne outbreaks of 1944 may well lead to milk, water, or sewage-borne epidemics of major proportions in 1945.

Every such disaster befalling a community involves the Division in an enormous amount of extra work, for which again it is seldom publicly credited. Not one of the cases alluded to above could have been diagnosed, nor a single carrier traced, without much highly skilled work, resulting in a specific report from the laboratories. The stool culture and blood agglutination tests used in the detection of these infections are especially time-consuming. Increases in numbers of cultures for organisms of the typhoid - paratyphoid - Salmonella-dysentery group of from 1,977 to 2,674, or 35.3 per cent., and in blood agglutination tests for the same group of from 4,503 to 7,810, or 73.4 per cent., therefore presented problems of serious concern.

The branch laboratories as a whole likewise showed some increase in blood agglutination tests for this group of organisms. But with few exceptions, stool specimens for cultural examinations were referred by them to the central laboratories. This type of examination, for proper performance, requires a wide variety of differential media on hand, and extensive experience with supplemental procedures for the identification of suspicious colonies, such as could be expected of few of the branch laboratories. Those branch laboratories which have continued this work will be requested to divert it to Vancouver, so that the very hard-pressed among them may more readily cope with other and simpler demands upon their resources.

BACTERIOLOGICAL ANALYSES OF MILK AND WATER.

An appreciable increase occurred in the numbers of bacterial counts and coli-ærogenes tests on milk samples from dairies distributing in the City of Vancouver and in certain other municipalities within easy distance of the city. Especially important was a continued increase in the number of phosphatase tests performed. These tests provide a valuable and accurate index of the efficiency of the pasteurization process to which a milk sample may have been exposed. The war has operated in various ways to eliminate from business many of the dairies formerly distributing raw milk in Vancouver; and the application of some laboratory test to pasteurizing plants became very desirable. During the year, 781 of these tests were performed in the central laboratories, an increase of 33.3 per cent. over the total for 1943, and numerous instances of faulty pasteurization were revealed. Several of the branch laboratories have now made this test available, and are carrying it out routinely upon the

increasing percentages of their local milk supplies which are subject to pasteurization.

The main relevant comment on bacteriological analyses of water is the remarkable change evident in the bacterial flora of Vancouver's water-supply as a result of the chlorination introduced towards the end of 1943. Whereas prior to chlorination it was not uncommon for 1 c.c. samples of the city's drinking-water to give a positive coli-*aerogenes* test, all the 10 c.c. samples examined throughout 1944 (with the exception of one solitary sample, following a heavy rainfall) gave negative tests. There could be no better proof than this of the extreme efficiency of the small and tasteless quantities of chloramine introduced into the city's water-supply.

Early in the year, the branch laboratories were requested to conduct regular examinations of the drinking-water supplies of their own and adjacent municipalities, the number of such tests to be performed monthly being based on the population, according to the standards recommended by the United States Public Health Service. Mr. R. Bowering, Chief Sanitary Inspector, arranged with the appropriate local public health officials for collection and shipment of the specimens. The Directors of all the branch laboratories readily co-operated, and the extent of the extra work entailed in the fulfilment of this request is shown by an increase of from 1,132 to 1,586, or 40 per cent., in the numbers of such tests performed by them.

Considerable numbers of samples from common carriers were sent in for bacteriological examinations by Mr. Perry, of the Sanitary Engineering Division, Department of National Health and Welfare. As in previous years, these tests were performed, both in the central laboratories and in certain of the branch laboratories, without charge to the Dominion Government.

Requests for examination of private water-supplies, mostly from farmers with wells, were referred to the Chief Sanitary Inspector; while requests for chemical examinations were referred to the Provincial Analyst.

OTHER TYPES OF LABORATORY TESTS.

Blood agglutination tests for brucellosis (undulant fever) increased from 1,147 to 1,957, or by 70.6 per cent. A slight decline was apparent in the percentage of positive reports on specimens from Vancouver residents, which was probably due to the diminishing amounts of raw milk consumed in the city. However, there was no evidence that the risk of contracting brucellosis was any less for those who insisted on taking raw milk. Blood specimens were received from several persons, both residents and non-residents of Vancouver, with clinical signs of acute brucellosis, who showed high titres of *Brucella* agglutinins; while from three such persons, all of whom were habitual raw-milk consumers, *Br. abortus* was isolated by blood culture. Both central and branch laboratories received numerous requests from farmers for examinations of milk or blood specimens from cows suspected of Bang's disease. These requests were particularly difficult for branch laboratories to refuse; but the official policy of the Division has been that the diagnosis of Bang's disease in cattle is properly a problem for veterinarians and for the Department of Agriculture, under whose auspices the requisite laboratory facilities for such tests should be operated. In an area in which the incidence of active or latent Bang's disease

is as high as it is in British Columbia, detection and eradication of the disease is most difficult. Apart from calf-hood vaccination, repeated, large-scale "reactor" surveys are required in laboratories specially set up for this purpose. Only confusion and embarrassment would result from the very occasional, isolated tests which is all that the present public health laboratory services of the community could possibly afford.

There was a slight decline in the numbers of throat and nose swabs examined for *C. diphtheriæ*, but no appreciable reductions in the numbers of positive findings from cases or carriers, most of whom were adults. The intensive immunization of pre-school and school children with diphtheria toxoid has proved its worth in the community, in that remarkably few secondary cases of infection occurred in children who were contacts of these adult cases and carriers.

The very marked reduction in the numbers of cultures for hæmolytic staphylococci and streptococci expresses a changed method of listing results, rather than a diminution in the number of specimens handled. While the presence or absence of each of these organisms is reported separately, such reports are usually based on the results of a single isolation procedure. It was therefore deemed more consistent to group these organisms together for statistical purposes; and the total of 4,316 examinations for 1944 is therefore only one-half the total which would have been recorded in previous years.

Cultures for *H. pertussis*, involved in the cough-plate diagnosis of whooping-cough showed a slight decline; and since the numbers of these examinations have never been large, it was decided to include them under the heading "Miscellaneous Cultures." Local physicians tend to give cough-plates to parents for collection of the specimen, which militates against the usefulness of the method. Since the isolation of these organisms is often quite troublesome, the Division, purely from its own standpoint, would not press for more extensive use of the cough-plate. But from the standpoint of public health at large, it is regrettable that this method of securing a specific diagnosis of whooping-cough in early, mild, or atypical cases, is not more widely and effectively employed.

Finally, an increased incidence of ringworm in Vancouver was reflected in the total examinations for *Tricophyton*, rising by 142 per cent. from 78 in 1943 to 189 in 1944.

DISTRIBUTION OF BIOLOGICALS.

The rapidly increasing rate of distribution of toxoids, vaccines, and serums for the prevention and control of communicable disease, which has been the subject of comment in each Annual Report since this Division assumed the responsibility of distributing these products, showed a tendency to level off in 1944. However, the trend is still upward, and biological products to the value of about \$25,000 were distributed during the year free of charge to physicians and other authorized persons throughout the Province. Although a small token payment of \$2,000 from the City of Vancouver is the only financial return received by the Division for this service, incalculable benefits accrue, in terms of freedom from certain specific infections, to the people of the Province from this form of investment of public funds. The materials distributed were all obtained, under an extremely favourable price contract, from Connaught Lab-

oratories, University of Toronto, whose reputation for the highest quality products is inviolate.

The only notable change in the list of available products was the deletion of anti-meningococcus serum. With the consent of Health Departments throughout Canada, Connaught Laboratories ceased manufacturing this product early in 1944, in view of the success attending treatment of meningococcic meningitis (cerebrospinal fever) with sulpha drugs.

In an attempt to avoid delays in the immunization of Indians resident in the Province the Division adopted the policy early in the year, with the approval of the Provincial Health Officer, of supplying certain biological products gratis to physicians operating under the Department of Indian Affairs. Again, certain minor inconsistencies which had persisted in connection with the supply of certain biological products to a few of the larger hospitals in the Province were eliminated; so that any product on the Division's current list may be requisitioned for use on hospitalized patients by the authorized representative of any recognized hospital or institution. The Division has, of course, continued to scrutinize, and wherever necessary to modify, all requisitions for biologicals; and there is reason to believe that very little wastage now occurs from surplus products becoming outdated.

RED CROSS BLOOD DONOR SERVICE.

In the last Annual Report it was intimated that the Vancouver laboratories had reached the maximum turnover of blood donations (2,500 monthly) which could be handled. This capacity was reached just towards the end of 1943. However, as a result of the remarkably fine spirit which animated both the paid and volunteer workers who participated in this work during certain months of 1944, nearly 3,500 donations monthly were treated and shipped; and the total number of donations processed in the laboratories rose from 17,338 in 1943 to double this figure, 34,574, in 1944.

This very notable achievement was accomplished without increasing the full-time staff of seven. In fact, one of the main difficulties was to find and train suitably qualified persons to replace the four who unavoidably resigned. The Red Cross Society paid the salaries of three Assistant Bacteriologists (all University graduates), one Laboratory Assistant, and three Cleaners; and also supplied a few volunteer helpers from the Red Cross Corps, who worked for occasional half-days. The Provincial Government supplied, through the laboratories, the accommodation, the direction and supervision, much skilled technical assistance, and most major items of essential equipment, such as refrigerators, hot-air sterilizer, autoclave and centrifuges. The work remained under the immediate supervision of Miss Malcolm, Senior Bacteriologist, who devoted over half her time to this task, and to whom chief credit is due for adjusting the numerous minor difficulties which arose in co-ordinating the laboratories' limited facilities with the fluctuating attendance of donors at the Red Cross clinics.

The lengthening casualty lists following "D-day" made increased demands for blood serum inevitable. This resulted in a raising of the Red Cross quotas for donations across Canada, British Columbia being assigned a quota of 750 weekly during the latter half of the year. This quota was frequently exceeded. On only two occasions were prospective donors asked to postpone their dona-

tions because the laboratories were quite unable to cope with the unexpected demand. On the other hand, there were numerous occasions when an exceptionally poor response on the part of the public to the call notices sent out by the clinic left the laboratories' facilities not used to capacity. In several conferences with Red Cross officials, the Director emphasized the reasons why the laboratories were an unavoidable "bottle-neck," and it may be fitting here to summarize the main difficulties.

The long distance between Vancouver and Toronto, where the serum is dried and bottled in Connaught Laboratories, made serum separation essential before shipment. Whereas centres nearer Toronto could simply ship the "whole blood" donations in the original collecting bottles, in Vancouver it was necessary to employ highly trained personnel, and to supply special accommodation and apparatus, in order that serum separation could be performed under sterile conditions. Factors contributing to the bottle-neck situation were alternating and unavoidable shortages of trained personnel, of accommodation, or of equipment; the problem of synchronizing serum centrifugation, separation, and pooling; the co-ordination of glassware cleaning and disassembling with sterilizing and reassembling; and the unpredictable fluctuations in the response of the public to call notices, so that the clinic was rarely able to maintain the fairly constant quota of donations which the laboratories desired. Additional difficulties arose from local adoption of the policy of holding three evening clinics, so that certain laboratory-work which had to be promptly done on these specimens might not be completed until nearly midnight. That most of this late night-work was done voluntarily by several members of the technical and non-technical staff of the laboratories, after a strenuous day in the same totally unglamorous surroundings, is most creditable to all concerned. In sum, the contribution made by the laboratories to this vital Red Cross project, while very little publicized, has been all-important and should be a source of great satisfaction throughout the Division.

GENERAL COMMENTS.

At the year's end, the staff at the central laboratories totalled forty-one, of which twenty-five had administrative and technical duties, fourteen had clerical and cleaning duties, and two had part-time janitorial duties. Of this total, seven were Red Cross employees, as already explained, but were regarded in every sense as members of the laboratories' staff. This number stands in marked contrast with the total of eleven persons of all ranks when the present Director joined the staff in 1935, less than ten years ago. The general trend in public health laboratory-work is undoubtedly upward, and still further staff expansion will be necessary. The present buildings cannot accommodate more than one or two additional workers. In fact, by all ordinary standards the laboratories have been overcrowded for years. The many other unsatisfactory features of the buildings have been repeatedly emphasized, and constructive proposals for their alleviation, by providing the laboratories with new quarters at the University, have been presented to the proper authorities. It is hoped and believed that plans for worthy new quarters will in the near future be approved.

Such a decision would permit the further broadening of responsibilities and enlargement of staff imposed upon the Division by local circumstances. Important laboratory-work which cannot now be attempted, such as the pre-marital blood tests, could then be readily undertaken. Attachment of one or more medically qualified epidemiologists to the Division could then be conveniently contrived, so that the valuable data uncovered in the laboratories might be applied in the field far more effectively than at present. Moreover, it would then become feasible to review the present organization of the branch laboratories with the possibility in mind of eliminating certain of the branches now operating. Under present arrangements a subsidy is paid to a hospital laboratory, or to some person attached to a hospital, and engaged primarily in clinical laboratory-work, in return for performance of such tests relating to the control of communicable disease as may arise from local sources. These arrangements have served their purpose well, with credit to all concerned; but recent advances in technique and changes in type of public laboratory-work have increasingly handicapped the small units. It is believed that more economical and more efficient services could be rendered by consolidating the existing six branches into three larger units, staffed by whole-time personnel under direct supervision of the central laboratories. Those classes of specimens which involve the more complicated procedures, which can be shipped without deterioration, and on which reports are not urgently required, could then be diverted to Vancouver without fear of overtaxing the central laboratories' facilities. That some such diversion of specimens has been already encouraged was noted earlier in this report, and is made apparent by the fact that of 201,767 tests performed in the central laboratories during 1944, 40,690 or 20.2 per cent. came from sources outside the Greater Vancouver area. Prior to the war, only about 10 per cent. of specimens examined in Vancouver were from the Province at large. But since 1938, while total examinations have almost doubled, those relating to specimens received from outside Vancouver have more than trebled. This trend is welcome evidence both of the increasing extent to which the central laboratories are directly serving the whole Province and of the greater utilizing of public health laboratory resources by physicians and health officials in the smaller cities and rural areas.

Other divisional changes already initiated, but requiring proper accommodation for their full development, are the inevitable involvement of the central laboratories in research, and the progress made in the internal organization of the staff. In connection with research activities, it need only be pointed out here that under present-day conditions to be proficient a public health laboratory must be animated by an investigational spirit. The Division has been fortunate in its close relationship, through unified direction, with the Western Division of Connaught Laboratories, and with the Department of Bacteriology and Preventive Medicine at the University; for this association has both reinforced its resources, and sustained the impulse, for engaging in research. The type of research has necessarily been strictly related to the work in hand, but has repeatedly proved its importance in maintaining a high general level of performance, a keen attitude among the technical staff, and a good reputation among sister institutions. The consequence has been that the branch labora-

tories and hospital laboratories throughout the Province have grown accustomed to referring problematical specimens to the central laboratories. One particularly interesting finding during the year centred upon an investigation into home-canned salmon and chicken, sent to Vancouver by Mr. George Darling, in charge of the branch laboratory at Nanaimo. Three deaths occurred in a Nanaimo family, attributed to botulism on clinical grounds. A protracted laboratory examination of the numerous "blown" cans remaining in the household showed *Clostridium botulinum*, Type E, to be present in one can of chicken. This particular type of the causal organism of botulism is very rare and had never before been isolated from any foodstuff other than fish. Investigation of the remaining cans is proceeding, and the whole findings will eventually be reported in an appropriate scientific journal. Again, during the summer it was a pleasure to perform a service for the Provincial Laboratories of Alberta, by testing the phage-susceptibility of numerous strains of *S. typhi* isolated in the course of an epidemic of typhoid fever in that Province, which was thought to be cheese-borne. The Vancouver laboratories found all the strains isolated from cases consuming the suspected cheese to be of the same type, thus providing an epidemiological clue whose value to the Alberta Health Department has already been acknowledged in a recent report of the outbreak in the Canadian Journal of Public Health.

For several years the Director had endeavoured to obtain official recognition of certain titles for the technical staff which would more satisfactorily define their status as a group, and would also provide several categories of different seniority and enrolments within the group. It was indeed gratifying that these recommendations were embodied in the Civil Service Commission Reclassification Committee's schedules of salary ranges and rates of promotion. The title "Bacteriological Technician" has given way to that of "Assistant Bacteriologist," the higher rank of "Bacteriologist" or "Serologist" being accorded those carrying supervisory responsibilities. A University degree, which must as a rule have been taken in Bacteriology, is a prerequisite for these and senior ranks. The additional junior rank of "Laboratory Assistant" was officially established, applicable to persons lacking the necessary academic background, but quite capable of learning the simpler laboratory procedures. Creation of this latter rank not only opens an avenue of promotion for persons of suitable calibre who may join the staff as glassware-cleaners, but also released the more senior technical ranks from preoccupation with the simpler repetitive procedures.

Another factor contributing to the excellent morale of the staff during the year was the policy of rotating the Assistant Bacteriologists between the various departments; so that, as far as circumstances permitted, they might soon grow familiar with all aspects of the technical work. Although there is, of course, no reason why an interchange of duties between the more senior members should not occasionally be arranged, in the period under review an attempt was made to assign fairly definite responsibilities to each such person. As the staff enlarges still further, a broader recognition of the principle of delegated responsibility will become necessary. Meanwhile, each Bacteriologist or Serologist has working under her one or more Assistant Bacteriologists and one or more Laboratory Assistants.

At the year end the central laboratories' staff comprised—apart from the Director (part time)—one Assistant Director, one Senior Bacteriologist, one Serologist, three Bacteriologists, nine Assistant Bacteriologists, five Laboratory Assistants, two Media-makers, two Clerks, three Stenographers, four Cleaners, and two part-time Janitors. During the year, three left from the technical staff, including Miss J. McDiarmid, who was granted leave of absence to join the R.C.A.M.C. as Bacteriologist after having given excellent service for nine years; Miss E. Hooley, who left to be married; and Miss F. Foehlmer, whose retirement was unfortunately necessitated by illness. There were also two resignations from the clerical staff, Miss N. Lumb leaving to be married and Miss I. Robertson to take another appointment. In their place, and as additions, the following were welcomed: Mrs. Hutchison (formerly Miss M. Gardiner) and Mrs. Sully (formerly Miss F. Jamieson) returned as Assistant Bacteriologists; while Mrs. P. Y. Meier and Misses J. Thicke, N. Scott, and M. Whimster were newcomers in the same capacity. Two new Laboratory Assistants, Misses M. Petavel and R. L. Rempel; three Stenographers, Misses D. Todd, J. Hall, and L. Froese; and two Cleaners, Mrs. D. Trezona and Miss N. Taylor, also joined the staff in Vancouver during the year.

The Division suffered a sad loss in the untimely death of Dr. Gordon A. McCurdy, Director of Pathology in the Royal Jubilee Hospital, who gave loyal and very competent supervision to the Victoria branch laboratory for the past seven years. Dr. Jan. Hoogstraten has ably carried on as Acting-Director in Dr. McCurdy's place. Numerous lesser difficulties due to staff shortages have beset all the branch laboratories during the year.

The Director addressed numerous medical and lay audiences during the year and published three papers in scientific journals. The central laboratories were visited by numerous distinguished persons, including representatives of the National Research Councils of Great Britain and of Canada and the Directors of the Provincial Laboratories of Alberta and Saskatchewan.

Finally, the Director wishes to record his warm appreciation of the work done by all in the Division under exceptionally trying circumstances. Miss D. Kerr, Assistant Director, has displayed her usual resourcefulness and fine spirit of devotion to duty. Miss M. Malcolm, Senior Bacteriologist, deserves personal credit for much of the excellent record in connection with the Red Cross blood donor work. Credit for splendid work in their various fields should also be given to Miss E. M. Allan, Serologist in charge of serodiagnostic tests for syphilis; Miss V. Hudson, Bacteriologist in charge of milk and water analyses and throat cultures; Mrs. J. Hardy, Bacteriologist in charge of stool cultures and blood agglutination tests for enteric infections; Miss H. Chang, Bacteriologist in charge of tuberculosis cultures and animal inoculations; Mrs. M. B. Allen, Clerk in charge of the office; and Miss E. Thompson, Clerk in charge of supplies. It is believed that the Division deservedly feels the satisfaction that comes from the knowledge of important tasks properly and cheerfully performed.

TABLE I.—STATISTICAL REPORT ON EXAMINATIONS DONE DURING THE YEAR 1944.

Examination.	Out of Town.	City.	Total in 1944.	Total in 1943.
Animal inoculations	80	394	474	437
Blood agglutination—				
Typhoid-paratyphoid-dysentery group	1,263	6,547	7,810	4,503
Brucellosis	317	1,640	1,957	1,147
Miscellaneous	9	9	18	59
Cultures—				
M. tuberculosis	188	575	763	561
Typhoid-paratyphoid-dysentery group	957	1,717	2,674	1,977
<i>H. pertussis</i>	*	*	*	44
<i>C. diphtheriæ</i>	1,041	7,921	8,962	9,430
Hæmolytic staphylococci and streptococci	1,027	3,289	4,316	8,808
Gonococcus	122	8,423	8,545	5,713
Miscellaneous	186	322	508	510
Direct microscopic examination for—				
Gonococcus	4,167	24,572	28,739	19,852
M. tuberculosis (sputum)	1,548	4,868	6,416	5,867
M. tuberculosis (miscellaneous)	178	307	485	428
Treponema pallidum (dark-field)	38	355	393	242
Vincent's spirillum	25	194	219	264
Tricophyton (ringworm)	3	186	189	78
Helminths (parasites)	29	66	95	70
Serological tests for syphilis—				
Blood—				
Presumptive Kahn	16,900	65,836	82,736	85,888
Standard Kahn	4,733	12,577	17,310	16,621
Complement fixation	3,877	10,767	14,644	11,730
Cerebrospinal fluid—				
Kahn	408	1,437	1,845	1,805
Complement fixation	444	1,523	1,967	1,296
Cerebrospinal fluid—				
Routine	357	1,007	1,364	1,063
Colloidal reaction	408	1,447	1,855	1,720
Milk—				
Bacterial counts	248	1,218	1,466	1,272
Coli-ærogenes	248	1,218	1,466	1,272
Phosphatase tests	122	659	781	586
Water—				
Total bacterial counts	2	590	592	697
Coli-ærogenes	1,627	1,223	2,850	2,626
Special examinations				121
Miscellaneous tests	138	190	328	488
Totals	40,690	161,077	201,767	187,175

* Included under "Miscellaneous Cultures."

TABLE II.—NUMBER OF TESTS PERFORMED BY BRANCH LABORATORIES IN 1944.

Examination.	Kamloops.	Kelowna.	Nanaimo.	Nelson.	Prince Rupert.	Victoria.	Total, 1944.	Total, 1943.
Animal inoculations.....	---	3	---	---	---	81	84	76
Blood agglutinations—								
Typhoid-paratyphoid-dysentery group.....	76	41	296	217	26	72	728	
Brucellosis.....	76	61	435	66	34	182	854	1,302
Miscellaneous.....	---	40	74	---	---	126	240	---
Cultures—								
M. tuberculosis.....	---	25	---	---	---	---	25	---
Typhoid-paratyphoid-dysentery group.....	64	42	---	4	---	80	190	297
<i>C. diphtheriæ</i>	62	19	39	10	168	1,846	2,144	667
Hæmolytic staphylococci and streptococci.....	90	104	---	223	83	1,007	1,507	2,047
Gonococcus.....	---	9	---	---	---	2,967	3,041	3,398
Miscellaneous (including <i>H. pertussis</i>).....	65	22	---	8	41	48	119	26
Direct microscopic examination for—								
Gonococcus.....	580	72	506	424	935	3,743	6,260	6,259
M. tuberculosis.....	235	233	713	1,763	449	4,417	7,810	7,541
Treponema pallidum (dark-field).....	6	3	---	---	62	42	113	198
Vincent's angina.....	61	11	21	72	58	66	289	483
Tricophyton (ringworm).....	---	7	---	---	1	5	13	---
Helminths (parasites).....	9	23	---	8	---	65	105	34
Serological tests for syphilis—								
Blood—								
Presumptive Kahn.....	3,159	---	---	---	4,519	15,686	23,364	---
Standard Kahn.....	---	515	2,103	2,959	880	1,024	7,481	32,372
Hinton.....	---	---	---	---	---	---	---	12,293
Complement fixation.....	---	1	---	---	---	872	873	381
Cerebrospinal fluid—								
Kahn.....	114	5	53	---	116	278	566	---
Complement fixation.....	---	1	---	---	---	148	149	---
Cerebrospinal fluid—								
Routine.....	44	5	96	29	117	305	596	809
Colloidal reaction.....	43	2	49	---	119	198	411	---
Milk—								
Bacterial count.....	101	112	---	275	118	995	1,601	1,289
Coli-ærogenes.....	109	115	---	280	117	1,002	1,623	---
Miscellaneous (phosphatase and methylene blue).....	1	861	---	25	54	655	1,596	1,366
Water—								
Total bacterial count.....	96	97	---	5	---	141	339	1,132
Coli-ærogenes.....	---	390	148	166	470	235	1,409	---
Miscellaneous.....	24	41	105	16	15	---	201	236
Total, 1944.....	5,015	2,860	4,638	6,550	8,382	36,286	63,731	---
Total, 1943.....	3,728	2,643	4,012	5,175	8,939	47,709	---	72,206

REPORT OF THE DIVISION OF VENEREAL DISEASE CONTROL, 1944.

W. C. MOONEY, MAJOR, R.C.A.M.C., ACTING-DIRECTOR.

INTRODUCTION.

The keynote of the activities of the Division of Venereal Disease Control for the year 1944 can be summed up in a word "change." Many changes in personnel have taken place, some variation in policy has occurred and there appears to be a significant alteration in the trend of reported new diseases. Some of these altered states appear to be of a fortunate nature while others have a not so happy outlook.

During the year there have been two changes of Acting-Director and a loss of an Educational Supervisor. There have been gains and losses in the medical staff and many new faces added to the substaff. The addition to, and subtraction from, the staff has been a mixture of vinegar and honey, with the result that the Division has become strengthened in some of its parts while suffering irreplaceable losses in others.

The total venereal disease notifications for eleven months have increased over the previous year. An analysis and explanation of this increase must await the publishing of the Division's detailed annual report, when the full breakdown of pertinent statistical data is available.

In the middle of the year a survey of the record and filing system of central office was made and recommendations submitted to increase their efficiency. These recommendations were adopted and the results have been to date very gratifying. To enable these suggestions to be carried out most expeditiously a branch secretary with previous administrative experience was transferred to this Division from the Division of Vital Statistics.

The last quarter of the year significantly began with a plan to reorganize the Division into four sections for what was considered the most effective manner of co-ordinating the various components of the present organization. The four sections which comprise the new arrangement are: (1) Section of Information and Public Relations; (2) Section of Epidemiology; (3) Section of Diagnostic and Treatment Service; (4) Section of Welfare and Rehabilitation. It is anticipated that when personnel are available that each of these sections will have a well-trained full-time individual in charge, responsible to the Director for the section activities.

To the Federal Division of Venereal Disease Control, under first the Department of Pensions and National Health and later the Department of National Health and Welfare, must go sincere thanks for their contribution to the programme, of grants-in-aid, expert advice on all aspects of venereal disease control, and, more than these, the assistance received in correlating the British Columbia programme with those of other Provinces. The Federal-Provincial Conference on Venereal Disease Control, sponsored by the Federal Division of Venereal Disease Control, which was attended by the Acting-Director and held in Ottawa in August of this year, and the suggestion which resulted in the Acting-Director attending the Conference of Post-war Venereal Disease Control in St. Louis in November, 1944, are examples of the leadership which the

Federal Division is showing in this most important aspect of venereal disease control.

INFORMATION AND PUBLIC RELATIONS.

Greater stress is being laid to-day on the rôle of education in the fight to eradicate venereal disease than at any time in the history of control programmes. The doctors, nurses, and social workers on the staff of the Division, as well as lay-groups, have assisted in furthering the venereal disease educational programme. Because of the appointment of the Educational Supervisor of this Division to a similar position at Ottawa on a Federal basis, the Provincial programme of necessity had to be curtailed to more or less local efforts.

Nursing education included lectures to undergraduate students of the Vancouver General and St. Paul's Hospital, Vancouver; Royal Columbian Hospital, New Westminster; and Royal Jubilee and St. Joseph's Hospitals at Victoria. The undergraduates from the Vancouver General Hospital received practical instruction and training in venereal disease therapy and epidemiology. Public health students from the University of British Columbia were trained in venereal disease education and epidemiology.

The Vancouver High School educational programme was arranged with the Superintendent of Schools and the Senior Medical Officer of the Metropolitan Health Committee. In all, lectures were given to thirty schools, reaching 1,905 girls and 1,000 boys.

The films "With These Weapons" and "Nine Cents Per Capita" were shown and 94,374 pieces of literature distributed. Fifteen copies of "Shadow on the Land" were placed in school libraries.

The Junior Board of Trade, wishing to pursue further their very successful Industrial Health Week campaign of 1943, offered to provide speakers and projectionists who would go out and give a twenty-minute talk and show the films "With These Weapons" and "Nine Cents Per Capita" to any organization desiring this service. Such a venture had never before been embarked on by this Division but obviously it had advantages. In the first place, it made available a large group of instructed and enthusiastic speakers; secondly, it would retain for the Division the interest and effort of a large and influential group of citizens; and thirdly, the speakers were required to equip themselves with correct factual information and became nuclei of knowledge on the subject in their community and among their business associates. A specimen lecture was prepared and the programme planned. Fifty-six lectures and film showings were given and 40,371 pieces of literature were distributed.

The Women's Protective Committee of the Welfare Council of Greater Vancouver is composed of representatives from various women's clubs throughout the city. Quoting from the chairman's remarks, "the purpose of this committee will be to serve as a medium through which they can unite in common action to strengthen the work they are doing or will do themselves, clear plans for the strategy of the campaign on the local front and be of greater mutual help to one another in our common cause." The Division of Venereal Disease Control was asked to prepare study outlines and provide speakers for this group so that they would become conversant with the problems involved in venereal disease control and in turn be able to present them to their own organizations. The outlines were prepared and seven very interesting round-table discussions

were held. All members discussed the problem with their own organizations and some arranged for the distribution of literature.

Three window displays depicting Canada's four sector attack on venereal disease were completed in February. It was decided that for the first half of the year they would remain in Vancouver. Cunningham Drug Stores kindly consented to carry the display. The large window display "That Baby You Love" was shown at the British Columbia Registered Nurses' Association convention and again exhibited at the Canadian Nurses' Association convention at Winnipeg on June 26th, 1944. Exhibits of venereal disease educational materials were also made at the Parent-Teachers Association convention.

Excellent relationships have been maintained with the churches. Films were shown to the Presbytery of the Baptist Church and also at their annual convention. An invitation to speak at the Temperance convention at St. Giles Church was extended and accepted. A series of lectures was arranged in New Westminster and the Fraser Valley under the auspices of the United Church. In all instances the churches came to us requesting our services.

In November a special luncheon meeting for representatives of the various women's organizations in Vancouver, North Vancouver, West Vancouver, and New Westminster was held in the Hotel Georgia to hear an address by Captain W. G. Allison, Venereal Disease Control Officer for the C.W.A.C., on the necessity for enforcing legislation with regard to premarital and prenatal blood testing. The address was followed by a film "Fight Syphilis." The pamphlets "Victory Over Disease" and "Isn't She Lovely" were distributed.

Also in November, continuing into December, a short version of "Fight Syphilis" was shown as part of the current film being presented by the National Film Board on their Industrial Circuit covering approximately sixty of the larger industrial plants in the Greater Vancouver and New Westminster area. Over 10,000 copies of the pamphlet "Victory Over Disease" were distributed following the film. This programme has been very well accepted and requests from industrial firms for further showing of films pertaining to venereal disease have been received.

Under the auspices of the Federal Division of Venereal Disease Control a series of three radio broadcasts relative to venereal disease education were heard over the national network in November. A short announcement regarding the availability of literature, free examinations and treatment for venereal disease for this Province was made.

Lectures on venereal disease with special reference to the participation of the Provincial Police in suppressing prostitution and controlling facilitation were given to the British Columbia Police School in Victoria during December.

Through the co-operation of the full-time Medical Health Officers, and Field Epidemiologists, educational programmes were sponsored in some of the rural areas. Dr. R. G. Knipe, Prince Rupert, organized a programme of lectures and films for the physicians and local police. Dr. J. M. Hershey and Miss Ann Murray, Central Vancouver Island Health Unit, Nanaimo, have carried on a sustained programme of physician education. A special lecture was given and films were shown to the physicians and nurses of the Nanaimo Hospital. Suitable literature was provided.

An industrial educational programme was arranged at Kimberley by Miss Janet Kennedy, newly appointed Field Epidemiologist for the Kootenay area. Films and literature were provided from the Division for this programme.

We have within the last few months received from Ottawa through a Federal grant considerable literature, two films "Fight Syphilis" and "Subject for Discussion," and a new Bell and Howell filmo-sound projector. These additions to the educational facilities are a real asset and very useful in meeting the many requests for lectures, literature, and films.

DIAGNOSTIC AND TREATMENT SERVICE.

Vancouver Clinic.—In January, 1944, a survey was made of the Vancouver clinic and it was recommended that an appointment system for patients be instituted and that all case-holding for diagnosed cases which represents 65 per cent. of the case-load be carried by the nursing staff. The appointment system was set up and went into effect February 1st. Nurses without previous social work were assigned to a social worker for a period of training, commencing February 7th. Following the period of instruction the case-holding of diagnosed cases was equitably distributed among the nurses and carried on under the supervision of the Supervisor of Epidemiology until the Division was reorganized this autumn and the nursing section divided into clinic nurses and epidemiologists. At present two of the clinic nurses are carrying some of the case-holding.

To facilitate clinic service, routine diagnostic procedures are now being done under a blanket order from the Director and patients do not see a doctor until their diagnostic procedures have been completed. This measure has proven to be a great time-saver, and has left the physicians free to do the necessary physical examinations, lumbar punctures, and consultations.

Changes in the record system were indicated, so specific recommendations were made in February; the recommendations were accepted and went into effect on June 1st; i.e., on admittance patients are given a medical card only, they are assigned a number and given a chart only if a diagnosis of syphilis or gonorrhoea is made.

Personnel changes have been many among the physicians, nursing staff, and laboratory assistants, and at times it has been most difficult to maintain a high standard of clinical efficiency. In spite of this there has been an increase in work done over 1943.

Oakalla clinic, which is staffed by members of the Vancouver clinic, has shown an increase in work particularly on the women's side. New Westminster clinic, too, has shown an increase in work and this increase has entailed the expenditure of additional medical and nursing time which is taken from the service which supplies the Vancouver clinic.

Because of the increased work and the Public Health Nurses spending more time in epidemiology, it has been necessary to engage a part-time nurse for four half-days per week. A ward assistant has been engaged twenty-two hours per week who relieves the nurses of cleaning, sharpens the intravenous and intramuscular needles, assists in care of equipment, and counting and packaging drugs.

In collaboration and co-operation with the epidemiology section, public health students' education has been effectively carried out. From February 22nd to May 20th seventeen of these nurses received instruction and training in treatment and control, and between September and December, 1944, eight more received similar training. Lectures and films on the general aspects of venereal disease control were given in the spring and again in the autumn to student nurses at the Vancouver General Hospital and Royal Columbian Hospital. During the year eighty-five student nurses from the Vancouver General Hospital have spent a two weeks' training period at the Vancouver clinic. They have received from the nurse-in-charge three or four lectures on the general aspects of venereal disease, medical aspects, epidemiology, and control measures.

In addition, this Division participated in industrial surveys. Nurses from the Vancouver clinic assisted by blood testing 1,200 employees of the Canadian Pacific Airlines, and to date have taken 500 Kahns at the Imperial Canneries, Steveston.

Other permanent clinics now operating outside of the Greater Vancouver and New Westminster area are in Victoria, Prince Rupert, and Trail. Their problems have been similar, although of a lesser degree than the Vancouver clinic. In spite of the increased work, changes in physicians, nurses and laboratory technicians, it can be said that patients are still receiving adequate, well-administered therapy, and the essentials of medical and epidemiological care.

EPIDEMIOLOGY—WELFARE AND REHABILITATION.

It is recognized that in any venereal disease control programme the development and expansion of epidemiological procedures is very essential. The failure to control sources and contacts of infection favours the spread of venereal disease. Therefore, emphasis is placed on the importance of interviewing every person diagnosed as having a venereal disease in order to obtain information regarding all persons who may have been intimately exposed to the patient. Because of the moral issues involved and the indifference and reticence of many to divulge such information a great deal of tact and diplomacy is required. Sometimes frequent interviews are necessary before satisfactory details are obtained. The patient is assured that all information will be regarded as strictly confidential. Obtaining adequate information is the first step in finding the contact. Up to November 30th of this year, 1,730 women and 276 men in the Vancouver area alone have been reported to our central office as contacts to venereal disease. Of this number, 920 women and 163 men have been located and examined. As investigations have not yet been completed on many contacts these figures are incomplete. In addition, the armed forces, private physicians, clinic patients, other Provinces, and the United States report contacts who are residing in other cities and in the rural areas. These are followed up by our Field Epidemiologists and the Medical Health Officers. Persons residing in other Provinces or the States are referred to the health department concerned.

There has been a very close liaison with the venereal disease control officers of the armed forces in locating and bringing in for investigation civilian contacts to venereal disease. Monthly meetings with the venereal disease control officers, a representative of the Metropolitan Health Committee of Vancouver,

the Acting-Director of the Division of Venereal Disease Control, and the Supervisor of the Epidemiology staff of the Division have been held to discuss and solve mutual problems pertaining to case-finding and facilitation.

During the year three Epidemiologists have been trained in the Division and placed in the field, one on Vancouver Island, one in the Kootenay District, and the third in the Fraser Valley. Two of these Epidemiologists are Public Health Nurses and the other is a graduate nurse. Their responsibilities are many and varied. Apart from the epidemiological investigations which they carry out they play a very important part in establishing a liaison between the Division and the private physicians in rural areas, interpreting to them the venereal disease control programme and explaining how the physician may use the facilities of the Division to his advantage. They co-operate with the Indian Agents in locating contacts and lapsed cases. The Field Epidemiologist also carries on a teaching programme for all Public Health Nurses in rural areas with the idea of preparing them to assume more responsibility for venereal disease work. Plans for the extension of our epidemiological service include at least one more Field Epidemiologist.

Since 1938 all epidemiology for the Vancouver clinic has been done by a staff of medical social workers under the supervision of a physician. As the programme has developed and expanded, it is realized that this work should now be the responsibility of Public Health Nurses with special training in epidemiology and that medical social workers should be using their special training in developing a welfare and rehabilitation programme.

Accordingly, the Public Health Nurses of the nursing staff as their experience in epidemiology investigations is expanding are gradually assuming more responsibilities in this field. It has been planned that eventually the epidemiology will be done entirely by Public Health Nurses.

Increased use has been made of the provisions of the "Venereal Diseases Suppression Act" whereby the Provincial Health Officer may order persons refusing examination or treatment to be committed to Oakalla. From January 1st to December 1st, 1944, there were twenty-two women committed to Oakalla under this Act. Orders for the detention of inmates examined and requiring treatment for venereal disease were obtained for thirty-six women and three men. Apart from the venereal disease aspect, it is felt that this action is of decided value in that it demonstrates that the Division can and will take definite action to enforce the provisions of the Act with regard to examinations and treatment.

Certain recommended techniques have been adopted against facilitation, the means whereby the healthy individual meets the infected individual. There are certain persons and premises which contribute in this way to the spread of venereal disease either wittingly or unwittingly. For the past two years emphasis has been placed on the importance of suppressing such activities. Persons involved in this way may be certain taxicab-drivers, pimps, procurers, brothel-keepers, owners of establishments such as certain dance-halls, cafés, cabarets, rooming-houses, hotels, and beer-parlours. Certain dance-halls, beer-parlours, and cafés are frequently named as places where pick-ups are made which lead to the acquisition of venereal disease. From January 1st, 1944, to October 1st, 1944, for the Province dance-halls were reported 345 times, beer-

parlours 145 times, and cafés 254 times. These figures represent only those reports received in the central office of the Division. It is realized that many persons acquiring venereal disease in this way do not come to the attention of the clinics of this Division. These figures, therefore, can only serve to indicate certain trends and to stress the importance of continued supervision of these places. In this regard we have been assured of the whole-hearted support and co-operation of dance-hall managers, the Hotels Association, and café proprietors.

PROBLEMS OF 1945 AND SUGGESTED SOLUTION.

As the war in Europe reaches a climax, British Columbia as a part of Canada is faced with a possibility which has inevitably occurred after previous world conflicts, namely, a post-war pandemic of venereal disease. These facts are evident: That in war-time there are certain features of patriotism, morale, self-respect, and other indefinable factors that tend to prevent many individuals from exposing themselves to possible venereal infection. The immediate post-war period is followed by a let-down of these forces with a resultant increase in promiscuity, and in its wake a higher number of venereal infections. To this probability we must face and to combat it the programme for the coming year has been planned.

Rapid Treatment Centre.—The purpose of this centre would be to provide accommodation for promiscuous girls who would be confined preferably on a voluntary basis until cured of their infection, also for non-co-operative women patients who would be confined under the compulsory provisions of the "Venereal Diseases Suppression Act" but who are of an age or class for whom incarceration in Oakalla Prison Farm would be most undesirable. Tentative plans have been made for acquiring suitable accommodation for fifty women near the City of Vancouver. The services of the medical staff of the Vancouver clinic would then be available. Although this institution would be primarily one for treatment, the present plan provides for a trained social worker to be attached to the staff who would be responsible for a definite rehabilitation programme so that these girls could be redirected into useful and remunerative jobs. A definite follow-up of all persons after discharge would be arranged so that the usefulness of the centre could be evaluated from both a treatment and a rehabilitation point of view.

Night Clinic.—It is proposed to increase the Vancouver clinic services in the evening, and if at all possible to arrange for these to be held in the downtown district. At present one evening clinic per week is held and the attendance is approximately 200 men and women. The nursing and medical staff are seriously overtaxed and the present clinic facilities will not allow for more expansion. To have the night clinics in the district which is most accessible to the majority of the patients would undoubtedly contribute towards increased regular attendance.

Girls' Industrial School and Juvenile Detention Home.—Both of these institutions are situated in Vancouver, the former being operated by the Provincial Government and the latter by Vancouver City. At present any inmates of the Juvenile Detention Home requiring treatment are brought to the Vancouver clinic, but it is felt arrangements should be made to provide for this treatment

at the institution itself because of the frequent escapes made from the clinic and the difficulties in examining young girls in a busy clinic. Also it is felt most undesirable to have them mingling with the regular clinic patients.

The inmates of the Girls' Industrial School are brought in for special laboratory tests such as cultures for gonorrhœa. Otherwise their examinations and treatments are supervised by the medical officer of the school. It would be a distinct advantage for this Division to have the full responsibility for the examination and treatment for venereal disease of all girls admitted to the Girls' Industrial School. It is therefore planned to survey the facilities already available at the Juvenile Detention Home and the Girls' Industrial School for clinic service so that the necessary equipment required may be obtained as soon as possible.

Penicillin.—An ample quota of penicillin has been assigned to the Division by the Controller of Chemicals. This new and valuable chemotherapeutic agent will not be available, however, until January, 1945. The drug will be used in the first instance for the treatment of patients with sulphonamide resistant gonorrhœa and selected cases of syphilis. It is hoped that at a later date when sufficient penicillin is available we may be able to use it for treatment of all forms of gonorrhœa. Because of its specificity for syphilis and gonorrhœa, its rapid effective action, and freedom from serious toxic reactions, this agent may well represent the greatest single forward step in the treatment of the venereal diseases in the history of medicine.

Much of any success attained in the year 1944 has been due to a spirit of co-operation which has existed in all our relationships. Particular mention must be made of the invaluable aid received from the Provincial Police, for without their sympathetic assistance the Division's advances upon a legal front would have been seriously curtailed. The liaison meetings held in the Acting-Director's office with the Command Venereal Disease Control Officers of the three services and a representative of the Metropolitan Health Committee has created an even better understanding of the problems facing the armed forces and the civilian health representatives, and has resulted in definite concerted action, particularly in the control of facilitation. To the staff, for their loyal support and excellent quality of work, goes the sincere thanks of the Acting-Director. A major portion of the credit for the excellent showing of the Division must be given to Doctor Dorothy E. Saxton, Acting Assistant Director, who carried the responsibility of this important work under the most adverse conditions, and thus achieved an enviable record in a short time in the field of venereal disease control. With the same spirit evinced on the part of the organizations and individuals associated with the Division and its activities, the challenge of the forthcoming year is viewed with interest and anticipation.

ANNUAL REPORT OF THE DIVISION OF TUBERCULOSIS CONTROL.

W. H. HATFIELD, M.D., DIRECTOR.

The Division of Tuberculosis Control is able to report considerable progress during the year 1944 in the face of the most challenging situations that have been confronted since the inception of the Division.

The population of the Province, particularly in the Lower Mainland area, continues to increase, creating further housing problems and overcrowding. A considerable number of new cases of tuberculosis have come to British Columbia from other Provinces. Of the new cases coming to the attention of the Division during 1944, one out of every five cases had come to this Province since January, 1942.

The armed forces continue to X-ray all recruits and any cases found are referred to the Division of Tuberculosis Control. Healthy recruits are admitted to the armed forces and removed from the community, thus there is some dilution of the general health standard.

During the past year we have begun to feel the increase of tuberculosis amongst the armed forces. The healthy recruits who have mixed with populations with high tuberculosis rates in England, Europe, and the Mediterranean, where tuberculosis control has been difficult or impossible, are beginning to show an increase in their tuberculosis rate and are being returned to us for treatment. For example, 15 per cent. of all the admissions to our tuberculosis institutions during 1944 were referred to us by the Department of Veterans' Affairs.

The staff situation throughout the Division has shown no improvement during the year, but by rearrangement of work and intensification of effort where it was most needed the challenge of meeting an increasingly difficult situation has been well met and all facilities have been used to the maximum.

The most serious situation that has confronted the Division is the lack of bed facilities. It is only by the very close correlation of work that exists between the Division and the local health services, the work of the visiting Public Health Nurse and the members of the Social Assistance Branch, together with centralized admission of patients, that the number of cases requiring care have received the attention that they have, either as in-patients or out-patients.

The basis of the tuberculosis control programme has been case-finding and every effort has been made with the equipment and staff available to uncover as many cases of tuberculosis as possible. Mass surveys have been carried out during 1944, one mobile bus unit being used since the beginning of the year and a second unit starting operation on November 15th. In addition to this survey-work all clinics of the Division, stationary and travelling, are carrying out surveys. With these facilities over 100,000 people have passed through our clinics during 1944.

Due to these efforts more new cases of tuberculosis have been reported. During 1943 there were 1,550 new cases of tuberculosis whereas during 1944 there were 2,317. Of all the new cases either reported to the Division or found by our clinics during 1944 the clinics of the Division diagnosed 1,364. If the Indians, who come under the Indian Affairs Branch of the Dominion Government, are excluded the percentage is 79.1.

The encouraging feature of these surveys is that tuberculosis is being diagnosed very much earlier. Of the total number of new pulmonary cases in the Province 1,005 or 48.8 per cent. were minimal. It is to be noted, however, that of this 744 or 74 per cent. were diagnosed by the clinics of the Division. This fact is further brought out when we note that of the total far-advanced cases only 109 or 27.7 per cent. were found by the clinics. This bringing to

light of early cases of tuberculosis shortens the period of treatment and makes it possible to start treatment either before or very soon after the case becomes infectious, thus eliminating much of the spread of infection throughout the community. In addition, those cases that are apparently arrested or apparently cured can be kept under observation so that breakdowns are either prevented or discovered at the earliest possible date.

NEW CASES.

PULMONARY AND NON-PULMONARY.

	1940.	1941.	1942.	1943.	1944.
Total.....	1,568	1,342	1,432	1,688	2,317
Indians.....	295	270	327	419	580
Oriental.....	156	127	108	106	156
Whites.....	1,117	945	1,016	1,163	1,585

PULMONARY.

Total pulmonary—					
Total population.....	1,447	1,193	1,157	1,484	2,058
Indian.....	280	221	254	345	498
Other than Indian.....	1,167	972	903	1,139	1,560
Minimal—					
Total population.....	489 (34%)	454 (38%)	400 (35%)	593 (40%)	1,005 (49%)
Indian.....	48 (17%)	25 (12%)	61 (24%)	68 (20%)	108 (22%)
Other than Indian.....	441 (38%)	429 (44%)	339 (37%)	525 (46%)	897 (58%)
Moderately advanced—					
Total population.....	319 (22%)	310 (26%)	317 (27%)	357 (24%)	506 (25%)
Indian.....	34 (12%)	28 (13%)	57 (22%)	56 (16%)	94 (19%)
Other than Indian.....	285 (25%)	282 (29%)	260 (29%)	301 (26%)	412 (26%)
Far advanced—					
Total population.....	427 (29%)	357 (30%)	378 (33%)	389 (26%)	393 (19%)
Indian.....	159 (57%)	151 (68%)	118 (47%)	142 (41%)	203 (40%)
Other than Indian.....	268 (23%)	206 (22%)	260 (29%)	247 (22%)	190 (12%)
Primary—					
Total population.....	52 (4%)	56 (5%)	33 (3%)	122 (8%)	150 (7%)
Indian.....	16 (6%)	14 (6%)	6 (2%)	72 (21%)	93 (19%)
Other than Indian.....	36 (3%)	42 (4%)	27 (3%)	50 (4%)	57 (4%)
Type not stated—					
Total population.....	160 (11%)	16 (1%)	29 (2%)	23 (2%)	4
Indian.....	23 (8%)	3 (1%)	12 (5%)	7 (2%)	
Other than Indian.....	137 (11%)	13 (1%)	17 (2%)	16 (2%)	4

At the end of 1944 there were 12,004 known cases of tuberculosis in the Province, giving a ratio of known cases to deaths of 22.6:1. When Indians are excluded the number of known cases totals 9,890, giving a ratio of known cases to deaths of 27.2:1.

The follow-up of these cases, the referral of contacts to the clinics, health teaching in the home, is the responsibility of the local health services and has been carried out very efficiently by these services. The development of full-time Health Units has materially helped in the tuberculosis control programme throughout the Province. The Division is pleased to report complete co-operation with every Health Unit.

Despite the conditions developing in the Province which are conducive to the spread of tuberculosis we are pleased to be able to report a very definite reduction in the death-rate during 1944. It is our hope that our control pro-

gramme is reflecting its activities through this lower death-rate and that we shall continue to see a decrease. However, it should be remembered that one year is not sufficient to show trends and that it is only after due time that accurate conclusions can be drawn.

TUBERCULOSIS MORTALITY.

	TOTAL POPULATION.		INDIANS.		OTHER THAN INDIANS.	
	Deaths.	Rate per 100,000 Population.	Deaths.	Rate per 100,000 Population.	Deaths.	Rate per 100,000 Population.
1940.....	598	76.6	199	739.2	399	53.0
1941.....	531	65.6	168	638.2	363	46.4
1942.....	548	66.4	162	650.3	386	48.2
1943.....	613	68.1	208	777.6	405	46.4
1944*.....	532	59.1	168	624.1	364	41.7

* Preliminary only.

INSTITUTIONS.

All institutions of the Division have continued to work at full capacity. The total bed capacity of 639 has remained the same. The number of beds available has been quite inadequate to meet the tuberculosis problem in this Province and there has remained a constant waiting-list for admission. In spite of this waiting-list British Columbia has the shortest time between application for admission and admission of any Province in Canada. This is due to the fact that cases are carefully selected for admission and that as soon as possible patients are returned to their homes where they receive supervision from local health services and follow-up treatment through the clinics of the Division.

The new increased social allowance for tuberculosis patients has also facilitated caring for patients in the home, allowing some cases to remain at home that would otherwise have had to be admitted and allowing shorter institutional stay for certain groups.

Applications were received during the year for 549 men and 334 women. There were 800 patients admitted during 1944 and 15 per cent. of these were admitted through the Department of Veterans' Affairs.

During the year a careful analysis was made of all the bed facilities in the Province, indicating the present need to modernize the existing institutions and detailing the future planning for existing institutions.

Because of the urgent necessity of providing extra beds it was decided to build a temporary addition to the Vancouver Unit. To this end an agreement was reached with the Vancouver General Hospital whereby this building will be erected on their property and they will provide certain services as they do for the present Vancouver Unit. It has further been agreed to remove this building when a new permanent sanatorium is ready for occupancy. Plans for this temporary addition to house seventy patients were completed and the contract let. It is hoped that these extra facilities will be available for patients by May of 1945.

An analysis of the bed needs for tuberculosis in British Columbia has been made and the Provincial Secretary has announced that a new sanatorium with

a first unit of 250 beds will be constructed for patients (in the Lower Mainland area). At the year end a definite site has not been selected, but many possibilities have been reviewed and with a selection of a site, which should be done early in the new year, plans for construction will be developed.

One of the main problems confronting the institutions has been the maintenance of an adequate staff. It has been difficult to obtain the required numbers and with changing staff and untrained personnel it has been difficult to maintain our past standards.

All institutions continue to hold weekly medical conferences at which all new admissions and all cases for discharge are carefully reviewed and changes in treatment of each individual patient are thoroughly discussed. With a shortage of trained personnel it has been found difficult to keep up with technical treatments required, such as chest surgery, pneumolysis, bronchoscopy, etc. Despite the difficulties encountered we feel that we have been able to maintain a high standard of medical treatment.

The Division would again like to point out the necessity of reaching a decision regarding the continued use of a portion of the isolation hospital in Vancouver and the necessity of developing a surgical centre within the Vancouver Unit.

A completely integrated programme for all institutions has been outlined in a special report.

CLINICS.

The Division now operates four types of clinics: stationary survey clinics, mobile survey clinics, stationary diagnostic clinics, and travelling consulting clinics. In addition to this the Division offers a consultation service throughout the Province for the rural areas. Any physician may have a patient X-rayed between visits of a travelling clinic and forward the film with a completed consultation form to one of the units of the Division for consultive advice.

A big expansion in the Division's case-finding programme was carried out during the year. A new mobile bus X-ray unit, using 4- by 5-inch films, started in the Vancouver area, carrying the X-ray directly to industries. At the end of the year a second bus was put into operation and started work in the Kootenay district, beginning at Trail. These units are able to X-ray approximately 300 people per day. During the year there were 55,868 cases X-rayed and 1.4 per cent. of these were referred to a diagnostic clinic for further study. Of this group 45 per cent. were diagnosed as having tuberculosis and 29 per cent. of the tuberculous were considered to require active treatment. A very high proportion of early minimal cases has been found through these mass X-ray surveys. The Division's aim is to some day X-ray all people in the Province annually. By this means every case of tuberculosis will be known and the cases developing will be found early, institutional stay will be shortened, the infectious cases will diminish and tuberculosis will then be truly under control.

In addition to the survey-work done by the two mobile bus units, cases are surveyed through the stationary clinics and a certain amount of survey-work is being done by the travelling clinics. The number of cases surveyed in this way amounted to 29,317. This survey-work increases the work of the diagnostic clinics. The diagnostic stationary and consulting travelling clinics examined

24,095 during the year. Thus there was a total number of examinations throughout various types of clinics of the Division of 109,280.

One new stationary clinic was planned during the year. The New Westminster Gyro Club offered to build a clinic to house the Tuberculosis Division and the Red Cross Society in the New Westminster area. As the work through New Westminster and district has materially increased the Department accepted the generous offer of the Gyro Club and further the offer of the British Columbia Tuberculosis Society to provide the basic equipment for this clinic. Construction was started towards the end of the year and the clinic should be open for operation early in 1945.

In addition to the routine travelling clinic work of the Division we have continued to assist the Indian Affairs Branch in their survey and diagnostic work and to assist the British Columbia Security Commission through consultation on cases in their New Denver Sanatorium.

PUBLIC HEALTH NURSING.

All public health nursing in relation to tuberculosis is done by the local public health nursing services. The Division continues to have a consulting Public Health Nurse who correlates the work of the Division through the Director of Public Health Nursing for the Province. The Division has participated in a review of all the various forms used by the public health nursing services and improved instructions have been prepared for distribution to all Public Health Nurses. The new Handbook on Tuberculosis has been distributed to nurses throughout the Province and acts as a general guide in their tuberculosis activities. With the further development of Health Units there has been a distinct improvement in the follow-up of tuberculosis cases in the home.

SOCIAL SERVICE.

There has been considerable consolidation of the work of the Social Service Section of the Division during the year 1944. There has been a general improvement in the standard of the social work done within the institution and a greater correlation between the Social Service Section and other workers of the Division, such as occupational therapists, teachers, librarians, and medical staff.

The early part of 1944 was devoted mainly to trying to clarify some adequate form of social assistance for tuberculosis patients and their families. A complete scheme was finally worked out and approved. This is now being administered through the Social Assistance Branch by the various municipalities. It is recognized that this is the most forward move in social work in relation to tuberculosis that has been made anywhere on this continent. The details of this scheme may be found in special reports of the Department.

Forward strides have been made in the problem of rehabilitation. A conference on the subject was called towards the end of the year and a special report on this meeting shows the importance of this phase of the tuberculosis programme. Special rehabilitation committees have functioned within the Division and through these committees an improved understanding of the rehabilitation problem has been brought about, with steadily progressive practical

application of this work bringing improved results. The Vancouver Occupational Industries in Vancouver and the Kiwanis Crafts Building in Victoria continue to give assistance.

NURSES' TRAINING.

The new nurses' training programme has been put into effect during the year and has developed very successfully. A re-evaluation of the course was made at the end of the year with the course being shortened to five weeks: three weeks on the wards, one week in the clinic, and one week of district nursing. By thus shortening and intensifying the course it has been possible to admit more students so that now the course will be available to all student nurses throughout the Province. This is probably the only programme of this type in Canada and is an aid to the nurses' training schools in giving this phase of the nurses' training to all their students. This will, further, undoubtedly aid the Division's work as these students take their place in active hospital work or go on to public health nursing in the Provincial or municipal service. A full-time trained teacher supervises this course at the Vancouver Unit. The new Handbook on Tuberculosis has proved very valuable for these students.

EXAMINATION OF GOVERNMENT EMPLOYEES.

Annual X-ray examination is now carried out as a routine in all Provincial Government institutions and the Division of Tuberculosis Control has taken the responsibility of keeping a centralized file of all these employees and of notifying each institution of the date the annual X-ray of each employee is due.

STATISTICS.

A new ledger system was put into effect within the Division at the first of the year and has proven most effective in giving us immediate statistics at the end of each month of all work done by the various units of the Division, allowing for more careful planning of the Division's activities.

The Division of Vital Statistics has co-operated fully in providing monthly statistics on morbidity and mortality, analyses of new and known cases and of the results of examinations done in diagnostic clinics. The Division of Vital Statistics has prepared all the graphs and charts for the Division of Tuberculosis Control's own annual report. These give a detailed study of the various phases of work done through the tuberculosis control programme.

RELATION WITH LOCAL HEALTH SERVICES.

Under the "Health Act" the primary responsibility for the control of communicable disease rests with the local health service.

The Division of Tuberculosis Control was created to provide services that it would be illogical for the local health services to duplicate. In addition to providing bed facilities the Division has assumed the responsibility for providing diagnostic services; that is, the technical equipment, space for clinics, and the necessary specialists to man such services. These services are available to the local health service and the basic responsibility for referring patients to such clinics is that of the local health service. In addition, the Division has

furnished literature and consultation to any local health service at any time upon request. Further, the Division has studied the epidemiology of tuberculosis throughout the Province and where it is felt that the local health service has been lagging behind, stimulative efforts have been made to try and bring this service up to the level of others throughout the Province.

LEGISLATION.

The problem of clarifying legislation relative to tuberculosis in British Columbia still remains to be accomplished. A complete review of the "Health Act" with regulations pertaining to all communicable diseases is in the hands of the Provincial Health Officer and the tuberculosis regulations await this full review.

It is recommended that attempts be made to clarify interprovincial problems and to this end the Division has recommended that a Dominion Tuberculosis Council with representation from all Provinces be formed.

GENERAL.

During 1944 there has again been placed on the technical staff of the Division an increased load. They have responded without complaints and it is only through their co-operative effort that it has been possible to put the increased programme into effect during the year.

With the increased bed facilities being provided during 1945 there will of necessity be an increase of staff which we trust will be more readily obtainable than they have been to date. One of the greatest shortages has been in the nursing staff and there has also been a shortage of trained medical personnel.

During the year a special commission reviewed all salaries throughout the Government Services and considerable changes have been made in the staff of the Division of Tuberculosis Control, which undoubtedly will help to produce a greater continuity of staff and greater incentive.

The budget of the Division for the ensuing year will show a substantial increase. The increase is due to the general increase of salaries by the special committee of the Provincial Government, the establishing of a new clinic in New Westminster, the extension of mass survey-work, the development of the student nurses' training programme, the increased prices for commodities, the necessity of replacing old equipment and providing new, and the opening of a seventy-bed temporary unit.

The Division wishes to acknowledge the co-operation that it has received from the Metropolitan Health Committee, the local Health Units, Public Health Nurses, the Social Assistance Branch, and other departments of Government.

There continues to be considerable voluntary assistance, particularly from those groups engaged in Christmas Seal activities. The following groups assist in this work: Imperial Order Daughters of the Empire at Vancouver, Chilliwack, Kelowna, Ladner, Penticton, Revelstoke, Trail, and Vernon; the Kinsmen Club at Vancouver, New Westminster, North Vancouver, and Prince Rupert; the Kiwanis Club at Victoria and Nanaimo; the Rotary Club at Kimberley, Nelson, and Fernie; the Stagette Club at Cranbrook; and the Soroptimist Club at Courtenay.

The Board of Directors of the Vancouver Preventorium has continued to provide accommodation for children between the ages of 2 and 14.

It is hoped despite the increasing population and war-time problems that, with the extension in X-ray services and bed facilities, there will be a marked inroad made on the tuberculosis problem during 1945.

REVIEW OF TUBERCULOSIS CONTROL PROGRAMME.

The Division of Tuberculosis Control was inaugurated in 1935 as a Division of the Provincial Board of Health. It handles all phases of tuberculosis work in British Columbia, including operating all clinics doing diagnostic work relative to tuberculosis and all institutions treating tuberculosis. There are no private or municipal clinics or institutions for tuberculosis in British Columbia.

The whole work is centralized in a central office situated in Vancouver and staff throughout the Province are employed as one organization. The central office correlates the work of the institutions and clinics with that of local health services and other divisions of government. All patients are admitted through a central admitting office and all accounting is centralized through a central accounting office.

The work of the Division is divided into various phases.

1. CASE-FINDING.—The Division operates four types of clinics. These are:—

- (a.) *Mobile Survey Clinics.*—These are the bus type of clinic, carrying a staff of three and complete X-ray facilities for taking 4- by 5-inch films. They do mass X-ray surveys in industries and in schools and, in certain areas, even X-ray whole towns. It is the hope of the Division to some day X-ray every one in the Province annually.
- (b.) *Stationary Survey Clinics.*—These are operated in large centres and the service is available to any one.
- (c.) *Stationary Diagnostic Clinics.*—All “other than negative” cases from the survey clinics are referred to the diagnostic clinics for complete diagnosis. These clinics have complete facilities for diagnosis—X-ray, bronchoscopy, laboratory, or whatever may be necessary.
- (d.) *Travelling Consulting Diagnostic Clinics.*—There are four of these with headquarters in strategically placed areas. They visit eighty centres throughout the Province, thus carrying the work to all rural areas.

In addition to the clinic facilities there is a consultive service for rural areas. Any physician who wishes to have an X-ray examination done between clinic visits may have a film taken at the local hospital and forward the film and consultation form to one of the clinics of the Division for interpretation. The Division pays the local hospital for taking such films.

All this diagnostic work is free to the individual, being paid for by the Provincial Government.

This case-finding programme has made possible the finding in British Columbia of a very high ratio of known cases to deaths, over twenty cases per

death now being registered, and has permitted early diagnosis of tuberculosis, over 60 per cent. of all cases throughout the Province being now classified as minimal on original diagnosis.

2. INSTITUTIONS.—British Columbia has a low ratio of beds, but centralized control has made possible the careful selection of cases for admission and earlier discharge than previously. Despite a ratio of only 1.8 beds per death the average length of time between application and admission is only one month. At the end of 1944 construction of more beds had been started and plans had been made for further expansion of bed facilities.

All medical services are available in all institutions. The central Vancouver Unit handles most of the more difficult cases, as in this centre all forms of specialization are available.

The Division has developed in its institutions an integrated service among physicians, occupational therapists, social workers, teachers, librarians, and nurses. These services are available in all institutions and a standard has been set up for all technical personnel.

All diagnostic and clinic facilities are free. When institutional treatment is required the patient pays upon ability to pay, the amount being decided after a careful social analysis.

3. FOLLOW-UP WORK.—The public health nursing follow-up service is carried out by full-time Health Units in many areas and in other areas there are Public Health Nurses. Over 80 per cent. of the population of the Province is covered by trained Public Health Nurses. In the few areas where no Public Health Nurse is available the work is done by social service field workers.

4. SOCIAL SERVICE.—Medical social workers are attached to all institutions of the Division and trained social workers are available throughout the Province through the Social Assistance Branch of the Provincial Government.

During 1944 a new special tuberculosis allowance was established which is considered one of the most forward social steps that has been taken anywhere on this continent to control a preventable disease. Under the old basis of social assistance one had to be destitute to receive assistance. Now the tuberculous patient, or patient's family, may apply for assistance on the basis of cessation of income. Thrift is sponsored in that they are allowed to keep certain liquid assets. The question of rent, mortgages, life insurance premiums, special food and comforts allowances are all taken into consideration. This is administered by the municipalities with the Provincial Government paying 80 per cent. of the cost.

Thus the family unit may be kept intact during the time the patient is unable to work and some assets that the patient may have are available for his rehabilitation.

5. OCCUPATIONAL THERAPY AND REHABILITATION.—Occupational therapy is available in all in-patient units of the Division. In addition there are two workshops, one in Vancouver and one in Victoria. A rehabilitation committee holds weekly meetings to guide patients in their increasing activities and attempts to place them, when physically able, in gainful occupations.

6. RELATION TO LOCAL HEALTH SERVICES.—The primary responsibility for the control of a communicable disease is that of the local health services. The

Division of Tuberculosis Control provides facilities and trained personnel that it would be illogical or impossible for local areas to duplicate. Thus, all diagnostic and treatment facilities are provided by the Provincial Government. The follow-up work in the homes, the rounding-up of contacts, the initiating and developing of surveys are all the responsibility of the local health services. The Division of Tuberculosis Control also acts as a stimulator of local health services where death-rates are found to be high.

7. RURAL PNEUMOTHORAX.—In order to allow discharge of patients from hospital to rural areas there has been established a series of pneumothorax centres throughout the Province where patients are able to obtain their pneumothorax refills.

8. NURSES-IN-TRAINING.—A nurses' training programme has been developed which offers an intensive course to any student nurse from any training-school in the Province.

The heads of the various training-schools and the Registered Nurses' Association were brought together when this was inaugurated and, consequently, practically all student nurses in the Province are now going through this course. They come to the Vancouver Unit of the Division, with the Provincial Government paying three-fifths of the student nurses' expenses for the whole course and also paying for necessary teachers, supervisors, library facilities, etc.

9. STATISTICS.—Statistics that are wanted day by day by the Division are kept in a ledger system by the Division itself. Statistics for annual analysis are placed on punch-cards and kept by the Division of Vital Statistics. Through the co-operation of the Division of Vital Statistics it is possible to give a comprehensive analysis of the tuberculosis problem in British Columbia each year.

10. WORKMEN'S COMPENSATION BOARD.—In British Columbia all hospital employees come under workmen's compensation for tuberculosis. All such employees are compelled to be X-rayed annually and any one developing tuberculosis who was shown not to have it at the time of employment in a hospital is eligible for compensation.

11. EDUCATIONAL WORK.—The Division has prepared a considerable amount of literature and also distributes literature from the Canadian Tuberculosis Association and moving-picture films to various local health services. Through the British Columbia Tuberculosis Society a full-time person is engaged in educational work in tuberculosis.

12. CHRISTMAS SEALS.—Christmas seal campaigns are operated by three voluntary groups in the Province under franchise from the Canadian Tuberculosis Association at Ottawa. These groups are the Vancouver Christmas Seal Committee, composed of the Municipal Chapter of the Imperial Order Daughters of the Empire and the Kinsmen Club; the Kiwanis Club in Victoria; and the British Columbia Tuberculosis Society in the remainder of the Province. These groups have proved of great assistance in the tuberculosis work in British Columbia and closely correlate their activities with the work of the Division of Tuberculosis Control.

13. INDIANS AND ORIENTALS.—There are two racial problems in British Columbia. British Columbia has the highest ratio of Indians to whites of any Province, with 22 per cent. of the Indians in Canada residing in the Province.

The Indian work comes under the Indian Affairs Branch of the Dominion Government, but the Division of Tuberculosis Control assists them in their diagnostic work through the medium of the clinics of the Division. The Indian Affairs Branch has increased the hospital accommodation for Indians in British Columbia and intends to further expand it.

In addition to the Indians, there are the Chinese and Japanese. The Chinese are a direct responsibility of the Provincial Government, whereas the Japanese have been taken over by the British Columbia Security Commission, financed by the Dominion Government. This Commission has constructed a sanatorium at New Denver, in British Columbia, where there are approximately 100 Japanese patients.

REPORT OF THE PUBLIC HEALTH ENGINEERING DIVISION.

BY R. BOWERING, B.Sc. (C.E.), M.A.Sc., PUBLIC HEALTH ENGINEER
AND CHIEF SANITARY INSPECTOR.

The Public Health Engineering Division exercises supervision and control over such environmental factors as may have an effect on the public health. These factors include water-supplies, sewage-disposal, milk plant sanitation, cannery and industrial camp sanitation, and other miscellaneous features of environmental sanitation.

The year 1944 was one of considerable expansion in that two technical officers were added to the staff. Dr. J. J. Carney, B.V.Sc., was added to the staff in June. Dr. Carney brings with him the training of a veterinarian, together with knowledge gained by a number of years' experience in the Health Department of the International Concession at Shanghai, China. Dr. Carney's title is "Consultant in Milk and Food Control." In December, Mr. C. R. Stonehouse, C.S.I. (C.), was added to the staff as Senior Sanitarian. Mr. Stonehouse is a qualified Sanitary Inspector with considerable experience in local public health service. Mr. Stonehouse left the Prince Rupert Health Unit to assume his duties with the Public Health Engineering Division. Mr. Stonehouse will assume the duty, among others, of supervising the sanitation of industrial and other types of camps. In addition, the services of an engineering student from the University of British Columbia were obtained for the summer months. With this assistance the Division was able to continue its detailed survey of a large number of fishing canneries on the Coast and, in addition, make sanitary surveys of several towns.

There was an increase in the number of certified Sanitary Inspectors employed by local health authorities in the Province. This increase in the number of qualified Sanitary Inspectors throughout the Province will have a tremendous effect in improving sanitation wherever these men are employed. It is hoped that with the increased availability of men in the post-war period this number will be greatly increased until such time as the whole Province is covered by qualified men. These Sanitary Inspectors do not come under the direct supervision of the Public Health Engineering Division, but are responsible to the Director of the Health Unit in which they serve. The Public Health Engineering Division provides a consultative service for these men.

The tremendous development of the north country that was noted in the 1943 report became more stabilized during 1944. Only one trip was made by the Director into the Prince Rupert area.

The various activities of the work of the Division will be discussed under separate headings.

WATER-SUPPLIES.

There are in British Columbia over 150 public water-supply systems serving over 75 per cent. of the population of the Province. Most of these public water-supply systems are owned by municipalities, although a number are owned by local improvement districts and by companies. Due to the topography and climate the majority of the water-supplies are drawn by gravity from mountain streams or lakes. There are very few public water-supplies in the Province drawn from wells or springs.

The Division has made a large number of sanitary surveys of watersheds during the past year. In addition, a large number of water samples have been examined for faecal contamination by the Division of Laboratories. These surveys and tests show that there has been a considerable improvement in the bacteriological quality of the water supplied in British Columbia during the past two or three years. Most of this improvement is due to the effects of chlorination. Approximately 70 per cent. of the population of the Province now use chlorinated water. There has now been more than a year's experience of using chlorinated water in the Greater Vancouver Water District. Bacteriological results of tests of both the raw and the chlorinated water show a marked improvement in the bacteriological picture for the chlorinated water. In addition, the general public, for the most part, do not notice any harmful taste effect due to the use of chlorinated water.

There are still a number of water-supplies in the Province which have been shown to require some form of treatment. It is believed that continued advance will be made during the year 1945.

As a result of the now widespread use of chlorine, the Division is considering the matter of preparing regulations for the control and operation of chlorination plants.

There are several water-supplies in the Province where filtration is needed as well as chlorination. It is believed that these filtration plants will have to wait until the post-war period.

SEWAGE-DISPOSAL.

Most of the larger communities have public sewerage systems. Since the main centres of population are near salt water, where the sewage is disposed of by dilution, there are relatively few sewage treatment plants. Some work that was done during the year in connection with outdoor bathing-places indicates that disposal by dilution is not always satisfactory where there is any question of contamination of bathing-beaches. Some additional work will be done in 1945 on the bacteriological quality of water in bathing-beaches as affected by sewers. This means that many cities which are now disposing of sewage by dilution should make a thorough study of their disposal points in order to protect bathing-beaches and to ensure that dilution is good in harbours in which

the movement of water is restricted by floats, log-booms, and boats, etc. In Vernon, the efficiency of the sewage-treatment plan was improved by the installation of apparatus for chlorinating the sewage-plant effluent.

There was very little new sewerage-work done in the Province as the large defence housing projects and the military camps are, to all intents and purposes, completed. Plans and specifications of several sewage plants were approved during 1944, the construction to take place in some cases in 1945 and in other cases in the post-war period. A case in point is the approval of a \$750,000 extension to the sewerage system of Vancouver. Sewers were constructed in the Village of Dawson Creek, and a sewage plant should be completed early in 1945.

The problem of sewerage of unorganized communities remains. During the year sanitary surveys of two large unorganized communities were made. It is hoped that during 1945 an interdepartmental committee will be able to suggest to the Government a method of having sewers built in unorganized territory.

In the case of private sewage-disposal problems, a number of pamphlets were sent out to interested parties, describing methods of building septic tanks for farm homes and rural residences. In addition, plans for the sewerage for two schools were also drawn up. Many of the pamphlets were accompanied by letters containing considerable information for the guidance of each applicant for information, based upon the individual case.

In 1945 it is expected that there will be a considerable amount of sewerage construction-work done, particularly if the war should end during 1945.

MILK SANITATION.

Although milk sanitation is one of the major features of environmental sanitation, the inspecting and grading of dairy-farms is not a function of the Provincial Board of Health but of the Department of Agriculture. The principal function of the Division of Public Health Engineering, therefore, lies in the inspection of engineering features of pasteurizing plants. The Division has also provided a consultative service to local municipalities in the enforcement of their own milk by-laws.

During the year 1944, as was mentioned previously, a consultant in milk and food control was added to the staff. Under Dr. Carney the Public Health Engineering Division's contribution to the milk sanitation programme will be greatly enlarged and extended.

In the 1944 Session of the Legislative Assembly of British Columbia, the "Milk Act" was amended to permit the high-temperature short-time method of pasteurization. This amendment in the Act required the making of regulations dealing with the type of equipment and the method of operation that would be required for the high-temperature short-time method of pasteurization.

There are still a number of localities in the Province where it is impossible to purchase pasteurized milk. Efforts will be continued in the coming year to arouse sufficient interest in these localities to have pasteurized milk made available. One event worthy of mention is the formation of a co-operative among a number of milk producers at Nanaimo for the purpose of constructing a pasteurizing plant. This plant should be producing pasteurized milk by January,

1945. This is an instance where the people who were in the business of selling raw milk, seeing the increasing demand for pasteurized milk, co-operated in building the plant in order to provide consumers with pasteurized milk, and yet retaining their own business. This procedure might well be followed in other localities.

There were no large milk-borne epidemics in British Columbia during the year 1944. This is the first year for a considerable number of years that there were no known epidemics traced to raw milk. This does not mean that there was no milk-borne disease, since there are, from time to time, cases of human disease which are probably milk-borne. The number of cases of undulant fever is a case in point.

Also in the 1944 Session of the House, the "Municipal Act" was amended to permit municipalities to require, by by-law, the pasteurization of all milk sold within the municipal limits. In order to pass this by-law a favourable vote of the electors of the municipality is required. In spite of the fact that some cities are very much concerned about the use of raw milk, there were no municipalities that took the opportunity of passing a pasteurization by-law during 1944. In the City of Rossland a series of samples of milk were taken from each dairy for bacteriological examination. This series of samples showed that the milk produced on the Grade A farms was, on the average, no better than that produced on a Grade B farm. This illustrates the greater need for local control of the milk-supply than is at present permitted by the "Milk Act," since the appearance of the words "Grade A" on a milk-bottle cap does not guarantee to the consumer that the milk is of satisfactory quality or that the milk is free from disease germs, but merely states that the farm on which the milk was produced is rated a Grade A dairy-farm.

It is anticipated that during 1945 the work of the Public Health Engineering Division in milk control will be greatly enlarged and extended.

SHELL-FISH SANITATION.

One of the important duties of the Division of Public Health Engineering is the sanitary inspection of oyster-producing areas. Oysters are usually cultured on foreshore lots leased from the Provincial Government. These leases are not granted until the Provincial Board of Health has made a sanitary survey of the lot and notified the Department of Lands that there is no objection from a public health point of view to the granting of such lease. Any leases that come up for renewal are not renewed until such a sanitary survey has been made. Reinspection of existing leases is made from time to time in order to see that no new contaminating influences have been introduced since the time of the previous inspection. Leases which have been issued since 1942 have a clause stating that the lease may be cancelled if, in the opinion of the Provincial Health Officer, the operation of such lease has become a menace to the public health.

The inspection and sanitary supervision of plants handling and shucking oysters and other shell-fish is also important and this work will come under supervision of the consultant in milk and food control. During 1945 it is hoped that a survey of all such plants may be made.

CANNERY SANITATION.

The advance that was noted in the 1943 report in fish-canneries' inspection was continued in 1944. With the assistance of an engineering student from the University of British Columbia, a thorough sanitary survey of several additional fish-canneries was made. There have thus been made sanitary surveys of all of the fish-canneries in the Province, except for one or two on the west coast of Vancouver Island and on the Queen Charlotte Islands. These will be completed in 1945. Inspection of fish-canneries by the Provincial Board of Health does not include the inspection of the actual fish product, but is confined to inspection of the environmental conditions of the cannery-workers.

Large-scale maps of each cannery were drawn and the important sanitary features shown. These included the location and size of all the housing units, privies, sewers, pig-pens, wells, wharves, sheds, and cannery plants, with relationship to each other and to the high- and low-tide water marks. By using this information, future inspectors will be able to observe as to whether the recommended improvements have been made. Copies of these reports, with recommendations, are being sent to the cannery operators.

These inspections have shown that there are three classes of people living at the canneries—the whites, the native Indians, and the Chinese. Each of these three classes of people have their own peculiar standards of housing and sanitation.

Regarding housing, the white residents are usually well housed. The Chinese accommodation is, in many cases, overcrowded according to western standards. The Indian housing problem has always been difficult, principally due to the fact, as a rule, only one small inadequate hut is provided for a family. Families vary in number from two to nine or ten. It is obvious, therefore, that there is considerable overcrowding in some of the Indian huts. The newer houses are better. Many of the older Indian huts are poorly constructed and are in a dilapidated condition. Overcrowding of Indian huts is often intensified by the custom of some Indians of inviting relatives and friends to live with them, although these people may not be employees of the cannery. It is felt that some method of control in which both the Native Brotherhood and the companies each have a part would have some beneficial result.

Toilet facilities at most of the canneries are not satisfactory. Privies are generally of the over-the-water type, with the result that faecal material is deposited on the beaches and left open to the atmosphere for many hours of each day. Where water-closets are provided the sewers rarely extend to minimum low water. As far as the public health is concerned, this is one of the most hazardous features at the salmon-canneries.

Water-supplies at the canneries are generally of a quality equal to that of the average municipality in British Columbia.

Pigs are kept by the Chinese at most canneries. The pig-pens are, as a rule, kept in fairly good condition, although some are too close to other dwellings.

One of the features adding to the insanitary appearance of some of the canneries is that there are generally no garbage collecting and disposal facilities. This is due partly to the habits of the majority of the people living in the canneries and partly to lack of interest on the part of the operators. It is felt that

if good garbage-cans were provided, and if the people were made to use them, much of this insanitary condition could be eliminated.

The major problems to be faced in cannery sanitation appear to be the question of disposal of human excreta, disposal of garbage, and the question of good housing. Most of these problems require for their solution the co-operation of the employees as well as action on the part of the employer. There is considerable room for education of its members by the Native Brotherhood of British Columbia. It is felt that only by co-operation of the employees' organization with the company that living conditions will be improved at the fish-canneries.

INDUSTRIAL CAMP SANITATION.

As in other years, a considerable number of camps were inspected by the Division of Public Health Engineering, by Sanitary Inspectors attached to the local Health Units, and by British Columbia Provincial Police officers. The conditions of the camps were, on the whole, fairly good in 1944. However, it has been felt for some time by the Division that a more intensive programme of industrial camp sanitation should be carried on by the Provincial Board of Health. This more intensive programme would include more frequent inspection, and the preparation of and enforcing new regulations that would ensure good living conditions for employees who have to live in camps. It was to aid in this work that a Senior Sanitarian was added to the staff. Mr. Stonehouse will have charge of the industrial camp sanitation programme.

SANITARY COMPLAINTS.

Each year there are a considerable number of sanitary complaints. Most of these complaints are of minor importance, although a considerable amount of time is required in their investigation. Many of these complaints are investigated by medical health officers, Sanitary Inspectors, and by British Columbia Provincial Police officers. A considerable number are investigated by members of the staff of the Division of Public Health Engineering.

A number of the complaints investigated concerned the disposal of septic-tank effluent into ditches and small watercourses. Where a number of complaints originate from a certain area, an attempt has been made to make sanitary surveys of the community. It has been found that some of these problems can only be solved by the construction of sewerage systems. Some of the complaints concerned disposal of sewage by army camps. In these cases the matter was discussed with the proper military authorities and in most cases satisfactory results were obtained.

Another constantly occurring cause of complaint relates to the collection of garbage and its disposal in unorganized communities. In some instances these problems cannot be solved without expenditure of money. For this reason, it is probable that some local organization is necessary. It is hoped that the committee formed of officials of interested departments to study such matters will be able to deal with this problem during the year 1945.

AUTO CAMPS AND SUMMER RESORTS.

There are a large number of auto camps and summer resorts in the Province. The importance of good sanitation and environmental conditions in and

around these auto camps and summer resorts is obvious when one considers the volume of tourist industry in British Columbia. A number of these auto camps and resorts have been inspected from time to time, although no all-inclusive programme has been in operation for the sanitary control of these places in the past years. The Division of Public Health Engineering is now preparing draft regulations and in co-operation with other interested departments of the Government a set of procedures for the proper sanitary and public health control of auto camps, trailer camps, and summer resorts. During 1945 this programme will be brought into operation, and it is hoped within another year or two that the matter of inspection of auto camps will be a routine.

GENERAL OBSERVATION.

The year 1944 has been one of expansion for the Division of Public Health Engineering. The increase in its staff has resulted in an opportunity for the Division to perform valuable service on a much more intensive scale. This expansion in technical personnel will not only mean that the Division will perform more work, but it also means that the work of Sanitary Inspectors employed in Health Units will be improved as a result of the better consultative services that will be available.

The Division would again like to record its thanks to the Division of Laboratories for its co-operation in the examination of samples of water, sewage, and milk. The Provincial Police deserve mention for their valuable work in inspection of sanitary complaints in outlying districts. Co-operation with the Division of Sanitary Engineering of the Federal Department of National Health and Welfare has been of the best with mutual advantages to both agencies. The Division also desires to acknowledge with thanks the unstinted and valuable assistance rendered by other members and staff of the Provincial Board of Health.

Slocan City																									222
Tashme				1		219	1										1								31
Telegraph Creek						29																			310
Terrace				4		302											1							9	
Tofino				4		14					7													32	
Trail				4	90					2	15						18	1						1	
Vancouver Metropolitan Health Committee				22	2,356						620						386	13						1	
Vanderhoof					23						1						1							406	
Vernon District					21						7						4	2						5	
Victoria					2	321					96						15	3						216	
Wells																								4	
Williams Lake					1	50											16							82	
Woodfibre					3						1						2	1						19	
Whole Province—																									
Cancer		1,220																						1,220	
Gonorrhoea																								2,283	
Syphilis																								1,191	
Tuberculosis																								1,991	
Totals	4	1,220	47	5,036	134	17	79	8	79	2,283	4,109	242	1	2	1,493	1,657	1	22	18	2	1	1,180	2,502	219	1,191
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* Arising outside Canada.

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The Royal Sanitary Institute
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